

# FLORIDA HIGHWAYS



Vol. V

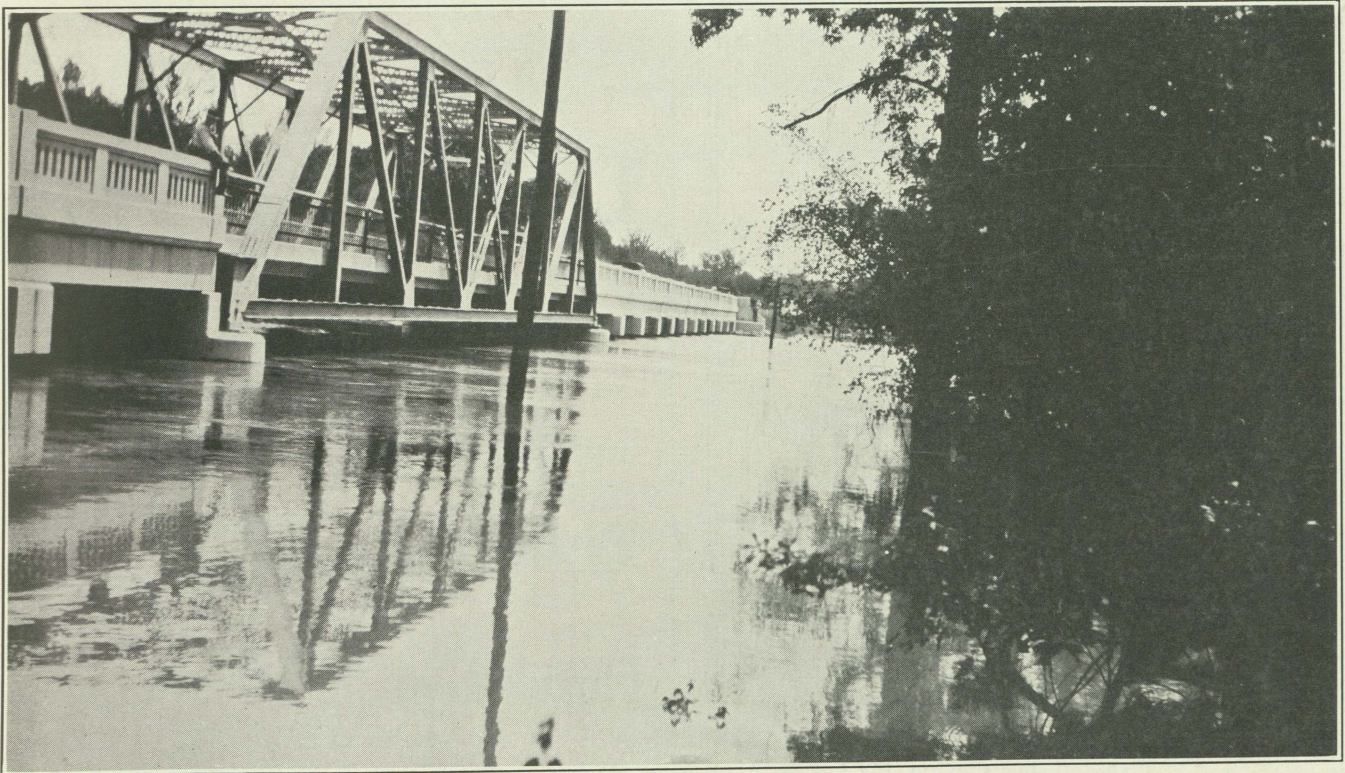
MAY, 1928

No. 5

Published by the State Road Department

\$1.00 Per Year

Single Copies 10c



Chipola River Bridge on Road No. 1, just East of Marianna, during flood in April.



Carey Elastite Bridge Flooring deadens vibration—quiets noisy framework and stays. It is extremely light—easy to apply. It can be cut and fitted like lumber; yet, because it is without grain, it cannot warp or crack.

THE PHILIP CAREY COMPANY  
Lockland, Cincinnati, Ohio

*Carey Elastite*  
BRIDGE FLOORING  
"Knits and Heals Under Traffic"

## Julien P. Benjamin DISTRIBUTOR

Russell Graders—all sizes  
Monarch Tractors—The chain drive tractor  
The Foote Paver  
Heltzel Road Forms and Bins  
Russell Road Equipment  
Marsh-Capron Mixers—all sizes  
Heltzel Side Walk, Curb and Gutter Forms  
Sauerman Slack Line Cableways  
Clyde Iron Works Hoists  
Climax Engines and Parts  
Sauerman Power Drag Scrapers  
McKiernan-Terry Pile Hammers—steam and air  
"Dixoyl"—the perfect lubricant  
Domestic Road and Power Pumps

Stock and Parts Carried in Jacksonville

Julien P. Benjamin  
Construction Equipment

Phone 5-0196

437 East Bay Street

JACKSONVILLE, FLORIDA

Wood Preservers Since 1878  
**Eppinger & Russell Co.**

CREOSOTED  
Forest Products of all kinds

Ties, Lumber, Piles, Poles, Cross Arms for Railroads, Bridges, Docks, Fences, and other purposes where permanent construction is required.

Also Manufacturers and Dealers in  
Yellow Pine and Cypress

Main Office: Park-Murray Bldg., 11 Park Place,  
New York

Branch Office: Jacksonville, Fla.

Plants at Jacksonville, Fla.

Long Island City, N. Y.

Information and Quotations Cheerfully Given.  
Address Nearest Office.

## HERCULES DYNAMITE Blasting Supplies

Write or Phone us for Prices

We Deliver Promptly by Truck

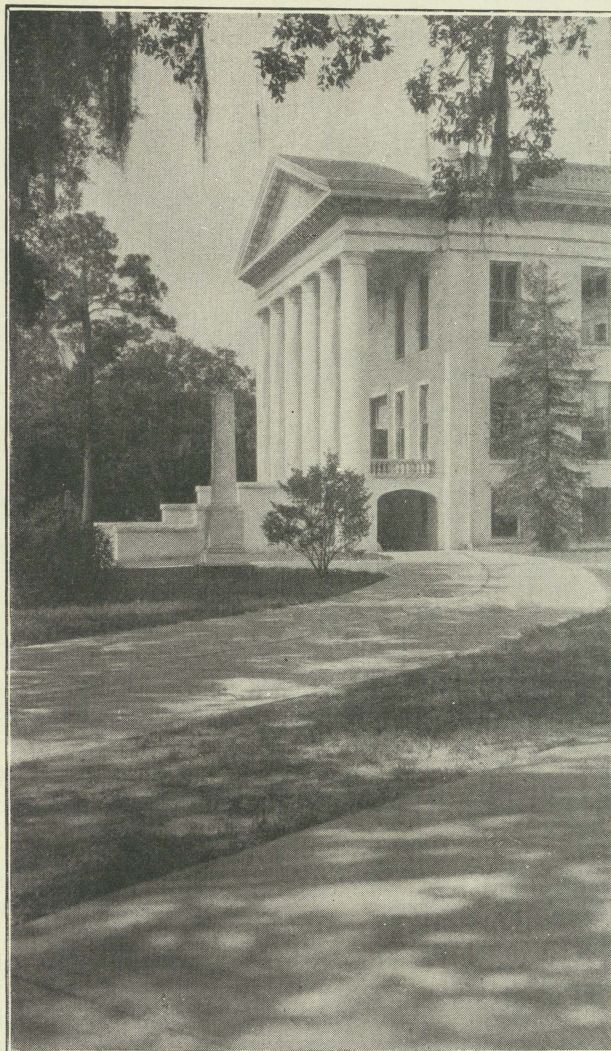
Florida Dynamite Company  
BARTOW

White Johns & Company  
DUNNELLON



# F L O R I D A

Vol. V  
No. 5



# H I G H W A Y S

MAY,  
1928

## Transactions at Quarterly Meeting of the State Road Department Held at Tallahassee, April 23rd, 1928.

THE second quarterly meeting of the State Road Department of the State of Florida for the year 1928, was held at its offices in Tallahassee, April 23rd, 1928, with the following members present: F. A. Hathaway, Chairman; E. P. Green, Captain W. J. Hillman and I. E. Schilling; J. L. Cresap, State Highway Engineer; W. P. Bevis, Secretary, and H. J. Morrison, Highway Engineer for the U. S. Bureau of Public Roads were also in attendance.

The minutes of the last quarterly meeting were read, and upon motion duly approved.

### **Alachua County—Road 31**

Major W. R. Thomas, Chairman Board of Bond Trustees of Special Road and Bridge District No. 1 of Alachua County, and H. L. Baker, District Engineer, appeared before the Department requesting that the State take over for maintenance the section of Road No. 31 from Waldo to Island Grove.

On motion of Captain Hillman, seconded by Mr. Schilling, the following resolution was unanimously adopted:

Resolved, that this Department favors and agrees to make provision in its budget for 1929 for taking

over State Road No. 31 in Special Road and Bridge District No. 1 in Alachua County from Waldo to the Marion County line, for State maintenance to begin January 1st, 1929.

### **Hillsborough County—Road 5**

Hon. W. T. Williams, Chairman, and J. N. Holmes, member of the Board of County Commissioners, and Messrs. Harvey Jackson and Ira MacDowell of Lutz, appeared before the Department with respect to the right of way for State Road No. 5 north of Tampa. The State Highway Engineer was authorized to go to Tampa and look over the situation and make his report and recommendation to the Department.

### **Lake County—Road 2**

A delegation from Lake County, consisting of Senator L. D. Edge, W. H. Richey, member Board of County Commissioners; W. M. Igou, H. W. Shepard, P. B. Ruggles, D. C. Laws, H. H. Hogan, A. W. Newett, Manuel Sloan, D. S. Hunt, F. T. Laird, L. G. Thomas and others, requested the Department to hard surface Road No. 2 in Lake County as early as possible and the delegation was informed that the Department will include same in



its next advertisement for bids, provided that the grade on project 695 is then ready for such hard surfacing.

#### **Leon County—Roads 1 and 10**

Geo. J. Sullivan, Chairman; Dr. C. M. Ausley and T. P. Strickland, Jr., members of the Board of County Commissioners of Leon County, came before the Department and requested that the contracts for the hard surfacing of Road 1 west of Tallahassee and Road 10 north of Tallahassee be let as early as possible. The delegation was informed that their request would be granted.

#### **Pinellas County—Road 17**

A request was presented by C. E. Burleson, County Engineer of Pinellas County, that the designation of Road 17 through Pinellas County be changed, and that the same be taken over for maintenance by the State in lieu of the present road which is now being maintained.

The State Highway Engineer was directed to investigate this proposal and recommend his findings to the Department.

#### **Polk County—Road 2**

W. J. Muldrow, City Manager of Ft. Meade, appeared before the Department requesting that State Road No. 2 be widened through Ft. Meade to a width of 27 feet, the existing road being now 21 feet of grouted brick.

On motion duly made, seconded and carried, it was ordered that the request be granted.

#### **Wakulla County—Road No. 10, Right of Way**

Upon motion of Mr. Hillman, seconded by Mr. Green, the following resolution was adopted:

WHEREAS, This Department has found and determined and it is hereby found and determined that it is necessary, wise and expedient to secure by eminent domain the real estate hereinafter described for the purpose of a right of way for State Road No. 10 through Wakulla County, Florida; and

WHEREAS, There has been prepared and submitted a map or plat which shows in detail the location of said State Road No. 10, which said map or plat is hereto attached and marked Exhibit "A";

NOW, THEREFORE, Be it Resolved, That the said map or plat be and the same is hereby adopted and approved as and for the location of said State Road No. 10 through Wakulla County, and

BE IT FURTHER RESOLVED, That the Board of County Commissioners of Wakulla County be and they are hereby requested and authorized to secure for this Department by purchase or condemnation the lands necessary for a right of way for said State Road No. 10, and particularly the lands described as follows, to-wit:

From the NE Cor. SE $\frac{1}{4}$ , SW $\frac{1}{4}$ , Sec. 33, Twp. 2 S, R 1 E; thence West 663.14' to point of beginning, being also a point on the East Right of Way Line of Florida Road No. 10, thence along said Right of Way Line, S 10° 50' E 8156.9', thence W 67.2' to West Right of Way Line of State Road No. 10, thence N 10° 50' W 8156.9' along West Right of Way Line; thence East 67.2' to point of beginning, containing 12.36 acres more or less and being in Sec. 33, Twp. 2 S, R 1 E, and Sec. 4, Twp. 3 S, R 1 E, Wakulla County Florida, all of which is owned by S. T. Rhodes.

BE IT FURTHER RESOLVED, That said County Commissioners be and they are hereby authorized to use the name of this Department in any condemnation proceedings necessary to carry out the purpose

of this resolution or to proceed in their own name as authorized by law; and

BE IT FURTHER RESOLVED, That in the event that they shall elect to proceed in the name of this Department that their attorneys be and they are hereby authorized to prepare, execute and file all necessary pleadings, affidavits and documents in connection therewith.

#### **Project 683-A—Road 4—Palm Beach County**

On motion of Mr. Schilling, seconded by Mr. Green, the following resolution was unanimously adopted:

WHEREAS, Palm Beach County desires that the concrete pavement on the above project between Station 2780 plus 28.2 and Station 2900 plus 28.2 as shown on plans of State Road Department's Project No. 683 A on Road 4, Palm Beach County, shall be brought to a width of twenty-eight (28) feet, and in pursuance of its desire has delivered to the Department the sum of Twenty-seven Thousand (\$27,000.00) Dollars, the estimated cost of such work, and has agreed to pay the additional sum necessary to the completion of the job, if any additional sum shall be found requisite; Now Therefore,

BE IT RESOLVED, That the Chairman and the Secretary be and they are hereby authorized for and on behalf of this Department to execute and enter into an agreement with Palm Beach County for the carrying out of the purposes of this resolution, which said agreement shall be in the words and figures following, to-wit:

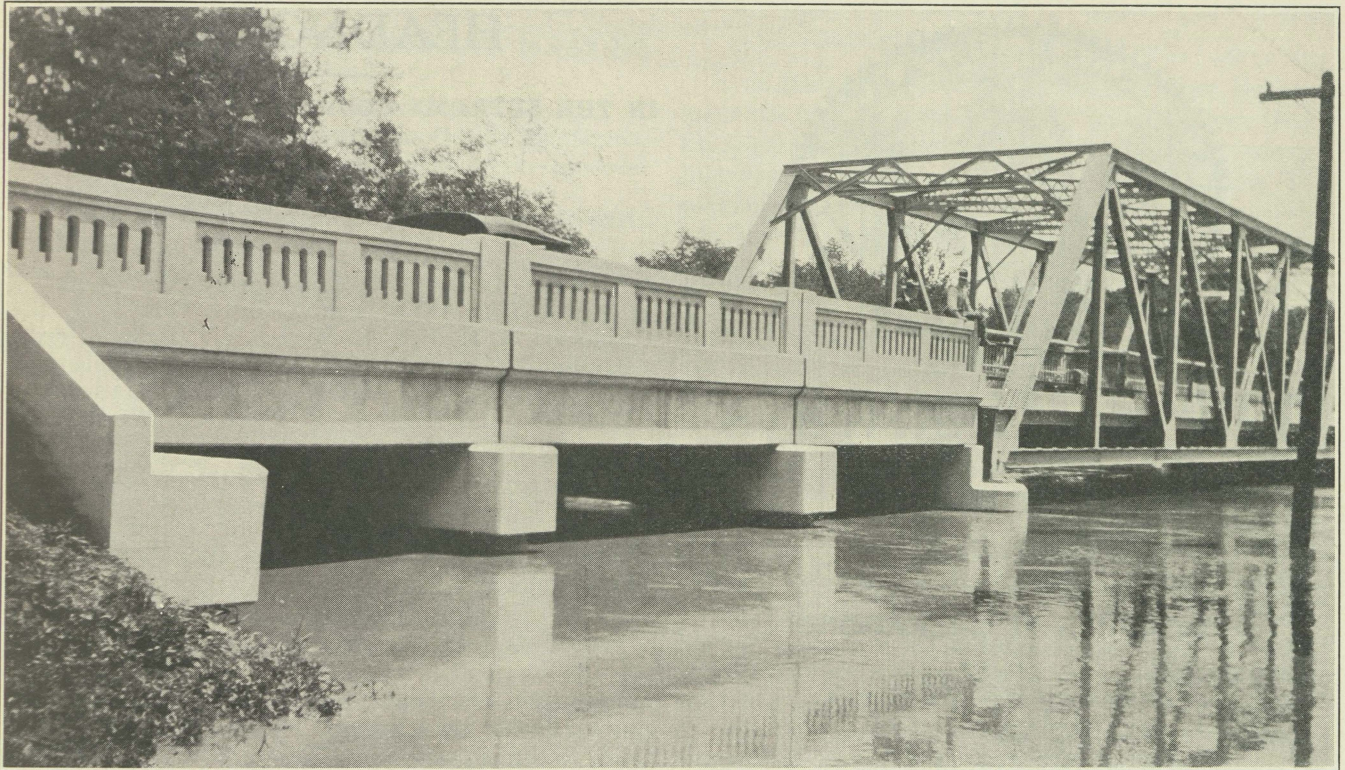
This agreement made this.....day of April, A. D. 1928, by and between the State Road Department of the State of Florida, acting by and through its Chairman and hereinafter referred to as the Department, party of the first part, and the County of Palm Beach, acting by and through its Board of County Commissioners hereinafter referred to as the County, party of the second part, witnesseth:

That the Department for and in consideration of the sum of Twenty-seven Thousand (\$27,000.00) Dollars to it in hand paid, the receipt of which is hereby acknowledged, and in further consideration of the agreement of the County to pay over such additional sum, if any, which may hereafter be determined to be necessary under the provisions hereinafter set out, does agree to and with the County to widen, to a width of twenty-eight (28) feet, the concrete paving on Project 683A in Palm Beach County between the following stations: From Station 2780 plus 28.2 and Station 2900 plus 28.2 as shown on plans of State Road Department's Project No. 683A, Road 4, Palm Beach County. It is agreed and understood that said concrete paving shall be done in accordance with the specifications attached to and forming a part of the contract of R. G. Lassiter & Company, entered into with the Department on the.....day of....., 1928, for the construction of a concrete pavement on said project.

It is further agreed and understood that in computing the amount necessary to widen said road in accordance with the terms of this agreement, that the unit price for said work as set out in the said contract with R. G. Lassiter & Company, shall be applied to the quantities necessary to effectuate the said width.

It is further agreed and understood that the thirty (30) foot width pavement between Station 2523 plus 85.2 and Station 259 plus 12.8 and between Stations 2759 plus 40.4 and 2780 plus 28.2, shall be reduced to a width of twenty-eight (28) feet, and that the





View of Bridge over Chipola River, Road 1, During Flood Waters in April

amount of money saved thereby shall be applied and credited on the amount necessary to widen to a width of twenty-eight (28) feet, the pavement first above described.

In consideration of the agreement on the part of the State Road Department the County does agree to and with said Department that, in the event that it shall develop that the amount of Twenty-seven Thousand (\$27,000.00) Dollars shall prove insufficient for the purpose of this agreement, it will pay to the said Department the additional sum necessary to widen the said pavement in accordance with the intent of this agreement; it being understood, however, that in the event that the sum of Twenty-seven Thousand (\$27,000.00) Dollars, already paid to said Department shall prove greater than the amount necessary to carry out the purposes of this agreement, the Department will promptly refund to the County the amount of such excess.

The Department further agrees with the County to make a supplemental agreement with the contractor to carry out the purport and intent of this agreement, and to make settlement with the said contractor for the said work in accordance with the unit price set out in the contract between said Lassiter & Company and the Department.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be signed by their respective Chairmen, and attested by the Secretary of the Department and the Clerk of the Board of County Commissioners this.....day of April, A. D. 1928.

THE STATE ROAD DEPARTMENT,

By .....  
Chairman.

ATTEST:

Secretary.  
BOARD OF COUNTY COMMISSIONERS  
OF PALM BEACH COUNTY.

By .....  
Chairman.

ATTEST:

Clerk of said Board.  
**Award of Contract Approved**

On motion of Mr. Schilling, seconded by Captain Hillman, the following resolution was unanimously adopted:

WHEREAS, bids were asked by this Department for the construction of an over-head crossing, Project 820B, Road 96, Jefferson County, and

WHEREAS, Perkins Construction Company, Jacksonville, Fla., was the lowest responsible bidder thereon; now, therefore,

BE IT RESOLVED, That the action of the Chairman in awarding and executing the contract to said Perkins Construction Company at and for the sum of \$4437.50, be and the same is hereby ratified, approved and confirmed.

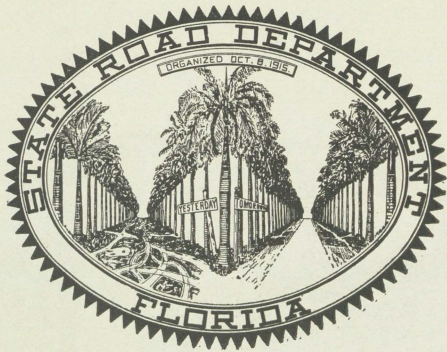
#### Adoption of Budget

On motion of Mr. Green, seconded by Captain Hillman, the following resolution was unanimously adopted:

BE IT RESOLVED, That the tentative budget of maintenance and construction work for the year 1928 as proposed and submitted, together with the addition thereto of the construction of that portion of State Road 17 between Plant City and the Polk County line as agreed upon at the Budget Meeting of the Department held in Orlando on March 24th, be and the same is hereby approved and adopted as the permanent budget of the Department for the year 1928.

(Turn to Page Five)





# Florida Highways

Published Monthly  
Official Publication of the State Road Department

## PERSONNEL OF DEPARTMENT

F. A. HATHAWAY (*Jacksonville*), *Chairman*  
(*Official Residence, Tallahassee.*)  
E. P. GREEN, *Bradenton*  
W. J. HILLMAN, *Live Oak*  
J. HARVEY BAYLISS, *Pensacola*  
I. E. SCHILLING, *Miami*  
WALTER P. BEVIS, *Tallahassee, Secretary*

## PERSONNEL OF EMPLOYEES IN GENERAL CHARGE OF THE WORK OF THE DEPARTMENT

### Engineering Division

J. L. Cresap, Tallahassee.....State Highway Engineer  
L. K. Cannon, Tallahassee.....Ass't. State Highway Engineer  
G. L. Derrick, Tallahassee.....Bridge Engineer  
C. W. DeGinther, Tallahassee.....Ass't. Bridge Engineer  
Harvey A. Hall, Gainesville.....Testing Engineer  
F. W. Berry, Jr., Tallahassee.....Office Engineer  
John R. Stewart, Gainesville.....Supt. of Equipment  
R. L. Bannerman, Marianna.....Div. Engr.—1st Div.  
Counties—Bay, Calhoun, Escambia, Franklin, Gadsden, Gulf,  
Holmes, Jackson, Jefferson, Leon, Liberty, Okaloosa, Santa  
Rosa, Wakulla, Walton, Washington.  
J. H. Dowling, Lake City.....Div. Engr.—2nd Div.  
Counties—Baker, Bradford, Clay, Columbia, Dixie, Duval, Hamil-  
ton, Lafayette, Madison, Nassau, Suwannee, Taylor, Union.  
R. J. Cassie, Fort Pierce.....Div. Engr.—3rd Div.  
Counties—Brevard, Indian River, Martin, Okeechobee, St. Lucie.  
L. B. Thrasher, Ocala.....Div. Engr.—4th Div.  
Counties—Alachua, Citrus, Lake, Levy, Gilchrist, Marion, Put-  
nam, St. Johns, Sumter, Flagler, Volusia.  
A. W. Kinney, Lakeland.....Div. Engr.—5th Div.  
Counties—Hernando, Hillsborough, Manatee, Orange, Osceola,  
Pasco, Pinellas, Polk, Seminole.  
R. C. Fergus, Fort Lauderdale.....Div. Engr.—6th Div.  
Counties—Broward, Dade, Monroe, Palm Beach.  
Henry Wilson, Punta Gorda.....Div. Engr.—7th Div.  
Counties—Charlotte, Collier, DeSoto, Glades, Hardee, Hendry,  
Highlands, Lee, Sarasota.

### Auditing Division

S. L. Walters, Tallahassee.....Auditor

B. A. Meginniss, Attorney for the Department,  
Editor and Business Manager.

## HEADNOTES

### IN THE SUPREME COURT OF THE STATE OF FLORIDA

January Term, A. D. 1928.

En Banc.

J. N. Willis, L. E. Smith, J. E. Pasley, M. D. Clancy,  
N. E. Griffin, D. D. Young, T. S. Parrish, J. H.  
Simpson, J. H. Hill, R. W. Hudson, L. E. Alford,  
Antonio P. Capitano, Scott Leslie, B. R. Hume and  
P. Y. Bryan, Appellants, vs. F. A. Hathaway,  
Chairman and Member; E. P. Green, W. J. Hill-  
man, J. Harvey Bayliss, I. E. Schilling, Members  
of the State Road Department of the State of  
Florida; J. C. Luning, Treasurer of the State of  
Florida; Ernest Amos, Comptroller of the State of  
Florida, and H. L. Clark & Sons, Inc., Appellees.—  
Leon County.

Opinion filed March 8, 1928.

BUFORD, J.—

1. The writ of injunction is an extraordinary, not an ordinary, every-day writ, and it should never be granted lightly but cautiously and sparingly and after notice to the opposite side. The writ of injunction is a highly beneficial writ, but great care should be exercised in awarding it, lest it be turned into an instrument of oppression and injury.

2. Both the granting and continuing of injunctions rest largely within the sound discretion of the trial court to be governed largely by the facts and circumstances of each particular case, and an abuse of such discretion must be made to appear to an Appellate Court to warrant it in disturbing the order of the Chancellor in such cases.

3. The statute under which the State Road Department acts in awarding road contracts is mandatory in its provisions and this is true, although it may be necessary to give judicial construction to those provisions.

4. The Legislature intended and did vest in the State Road Department the power, authority and duty to determine not only from a standpoint of dollars and cents who should appear to be the lowest bidder, but also to determine from information available to and acquired by the State Road Department what bidder or bidders would be adjudged by the State Road Department to be responsible bidders for each particular contract sought to be awarded and from such responsible bidders, for such particular contract to then determine the lowest of such responsible bidders, and in determining the responsibility of the bidder it became and was the duty of the Road Department to ascertain the degree of experience, the reputation for performance, the possession of facilities, the outstanding obligations, the obligations then assumed, or about to be assumed, the integrity and credit, as well as other matters which might touch and have influence upon the ability of each bidder to perform the contract for which he had placed a bid.

5. The statute unquestionably vested in the State Road Department the discretion to determine who are and who are not responsible bidders and in the exercise of this discretion the complainants in the court below, the appellants here, have not met the burden of

(Continued next page)



## TRANSACTIONS OF DEPARTMENT MEETING

(Continued from page 3)

### Expense Accounts Approved

On motion of Mr. Schilling, seconded by Mr. Green, the expense accounts of the members were approved and ordered paid.

There appearing no further business the Department was adjourned.

### HEADNOTES

(Continued from page 4)

showing that the discretion was exercised on a misconception of law or in ignorance, through lack of inquiry, or was the result of arbitrary will or improper influence or in violation of law.

6. Ordinarily, courts will not interfere with the exercise of discretion of executive officers of school districts in performing their functions, but will intervene if it appears their action was based on misconception of law, or ignorance through lack of inquiry, or was the result of arbitrary will or caprice or improper influence or in violation of law.

An appeal from the Circuit Court for Leon County, E. C. Love, Judge.

Watson & Saussy, for appellants; Fred H. Davis, attorney general; B. A. Meginniss and W. J. Oven for appellees.

John D. Rockefeller has a new great-granddaughter. Now some wretch of a paragrapher probably will tell us that there goes another dime.—Memphis Commercial Appeal.

“Why the gloom, Osmond? Girl not coming to the dance?”

“Oh, she’s coming all right, but she can’t even send a telegram without saying ‘stop’ after every sentence.”

### Missouri

In planning improvements, the highway department has made it a policy to fix “bad” sections first, raising grades across bottom lands above high water, improving roads through rough, stony sections, replacing old bridges and otherwise ironing out traffic hindrances.

### Nevada

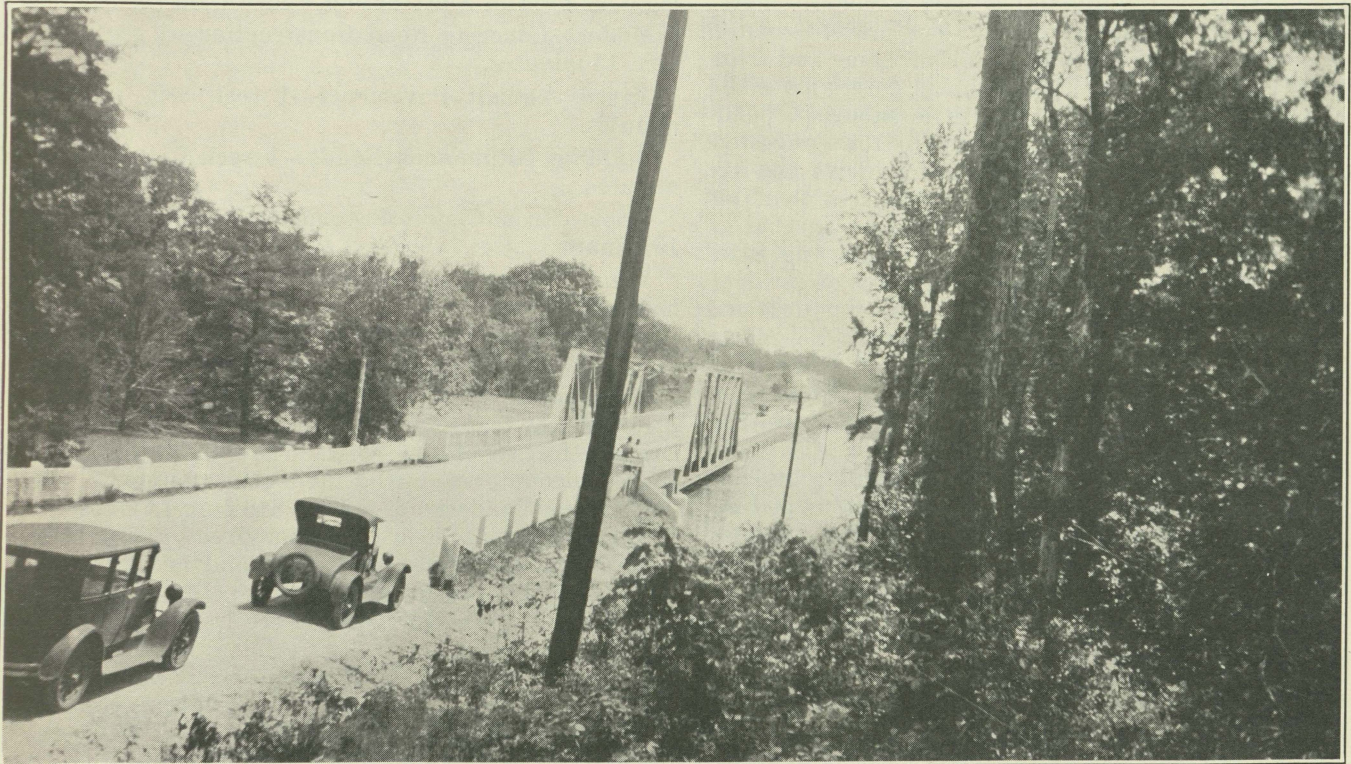
The eighty thousand citizens of this state will spend \$1,700,000 on the upkeep and further improvement of their state highways this year; \$356,000 will be for maintenance. The gasoline tax and license fees will provide \$325,000 and \$294,000 will be provided locally, the remainder being federal aid.

### New Hampshire

Road Building plans for 1928 contemplate the building of 27 miles of concrete and 9 miles of bituminous macadam, at a cost of approximately \$1,350,000. Certain projects are to be built under the state aid law, which provides that cities shall share the expense equally with the state and that townships shall pay 1/4 to 1/3, according to their resources.

### New Jersey

Traffic in 1932 will be increased 200 per cent over 1923, states W. G. Sloan, state highway engineer, after reviewing New Jersey traffic studies. A graph made from these studies shows 1,600 vehicles daily as the conservative maximum capacity of a single-traffic lane at 22 miles an hour.—The Highway Magazine.



Another view of Chipola River Bridge on Road 1, East of Marianna when the April flood was at its crest.



## Films on Road Improvement Distributed Free by Department of Agriculture

**“W**HEELS of Progress” is the title of a new educational motion picture produced for free distribution by the United States Department of Agriculture. The film compares the highway transport conditions of 30 years ago with those of to-day and shows the tremendous strides that have been made toward rapid and individualized transit as a result of road improvement and the development of the motor vehicle.

Oldsters will chuckle over the road and street scenes of the nineties. The sedate young society belle in chip bonnet, puffed sleeves and trailing skirts paying afternoon calls in her victoria. Bicycle girls in bloomers and tam-o’shanters—new women they were called—and the more serious male devotees of the wheel in their caps and sweaters. Workingmen walking to their places of employment, their full dinner pails swinging. High-hatted and frock-coated big-wigs of business entering a marvelous new eight-story skyscraper. The farmer with his truck-laden wagon on his way to the city on market day.

And then the first suggestion of a change! The farmer’s somnolent progress is disturbed by a snorting, plunging monstrosity, a ’98 automobile—accent on the third syllable, if you please—and there is reenacted the turbulent little scene of familiar memory to those who lived in those wonderful days at the turn of the century. The tooting horn; the shying horse; the irate driver; and the exchange of lurid compliments as the “motor car” passes in a cloud of dust.

The wheel of progress is turning, and as the picture proceeds it turns faster and faster. The sedate young lady of the nineties is now a modern short-skirted matron who brings her sport-model roadster to a stop before a spacious suburban home and trips lightly up the steps. The workman enters his small closed car at his comfortable little suburban home and quickly reaches the factory in the congested city. The farmer, also has learned to drive and his home twenty miles from the city is less than an hour’s ride.

“Everywhere everybody rides” reads one title, and then the picture shows the variety of services performed by motor vehicles—from the spotless car of the President of the United States at the White House to the dilapidated machines of a band of gypsies encamped at the side of a road. The various uses of motor trucks, including the fire engine, are also shown.

“Wheels of Progress” is an entertaining and instructive film that will enliven any motion picture program. It is one reel in length and requires less than 15 minutes to show. It is one of the educational films prepared for the Bureau of Public Roads by the Office of Motion Pictures of the Department of Agriculture.

Other films illustrate the methods of constructing the various types of Federal-aid roads, and show the spectacular and hazardous engineering work on the western National Forest roads. A special series of films, recently issued, and described in detail be-

low, picture the superb scenic attractions of the national parks and the difficulties encountered by roadbuilders while constructing motor-ways into these mountainous areas. Other films show the progress of highway research and tests during the past decade.

All of these motion pictures are furnished free of charge, except for the regular transportation cost which the borrower is expected to pay both ways. They are available to the general public, as well as to State highway departments, road organizations, automobile clubs, colleges, schools, churches, theatres, and other agencies. In all cases it is necessary that a reliable person assume responsibility for such charges, and for the safe-keeping, proper use, and prompt return of the films, all of which are of standard theatrical width.

Applications for permission to borrow the films should be addressed to the Office of Motion Pictures, Extension Service, United States Department of Agriculture, Washington, D. C. Applications should be made as far in advance as possible, and should specify several alternative choices of subjects and dates. The period of loan requested should be no longer than is necessary. Schedules of proposed showings, or other definite information indicating the use proposed for the pictures, should accompany the application.

A brief description of the road films which are now available for distribution, and the time required for showing, follows:

### Types of Roads

The films under this heading show representative methods used in constructing Federal-aid roads.

Modern Concrete Road Construction—1 reel, 995 feet, 15 minutes.

Mixed Asphalt Pavements—1 reel, 889 feet, 13 minutes.

Building Bituminous Roads—1 reel, 771 feet, 12 minutes.

Brick—From Clay to Pavement—1 reel, 1,001 feet, 15 minutes.

What About Macadam?—1 reel, 883 feet, 13 minutes.

Granite Block Paving—1 reel, 706 feet, 11 minutes.

### Forest Road Building

These scenic films were made on sections of completed forest roads in the mountainous areas of the national forests of the West. They show the difficulties encountered during their construction.

Roads to Wonderland—1 reel, 848 feet, 13 minutes.

Scenic forest roads in the Mount Hood and Crater Lake National Forests in Oregon, and in the Yosemite National Park in California.

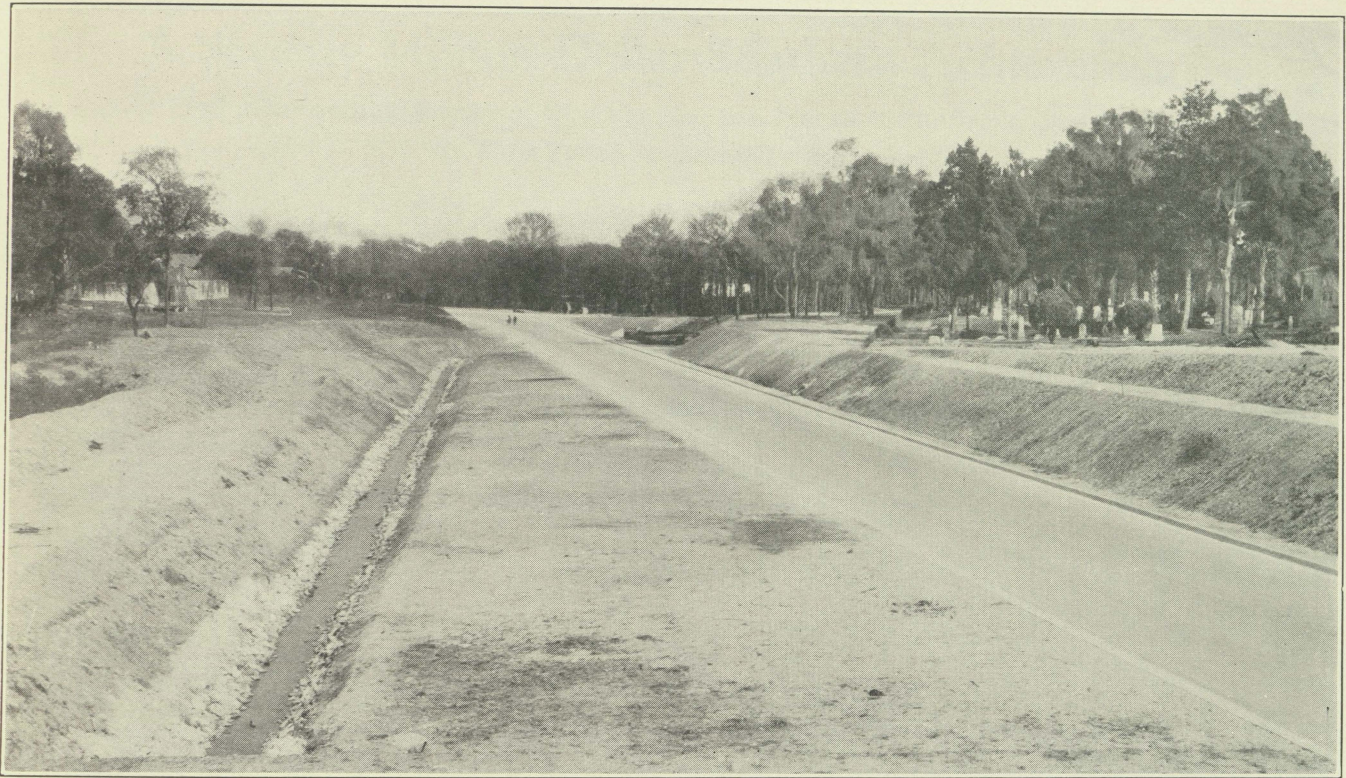
Highroads and Skyroads—1 reel, 903 feet, 14 minutes.

A selected series of construction scenes and scenic views of national forest roads in the western States.

Around the West by Forest Roads—1 reel, 981 feet, 15 minutes.

Examples of forest roads built by the Bureau of





Project 50-A, Road 14, in City Limits of Palatka.

Public Roads in California, Colorado, Oregon, and Arizona.

Building Forest Roads—1 reel, 948 feet, 15 minutes.

Construction scenes with men and machinery on the national forest roads in the West.

Roads from Surf to Summit—1 reel, 872 feet, 13 minutes.

Scenic wonders of the national forests in the Pacific Northwest: Lake Crescent, Mount Baker, and Mount Rainier, in Washington; Crater Lake and the Mount Hood Loop road, in Oregon.

The Road Goes Through—1 reel, 911 feet, 14 minutes.

Methods that are commonplace to the western road builder make a trilling picture.

#### Miscellaneous Road Building

Crossing the Great Salt Desert—1 reel, 980 feet, 15 minutes.

Terrors of the pioneers abolished by the construction of the famous Wendover Cut-off across the Great Salt Desert in Utah.

Roads for All America—6 reels, 6,021 feet, 11½ hours.

Visit of the United States delegation to the first Pan American Road Congress at Buenos Aires in Argentina. Shows the reception of the Pan American Highway Commission by President Coolidge, the Panama Canal, types of South American highways, scenes of general interest, and leading men, including the Presidents of Panama, Peru, Chile, Argentina, Uruguay, and Brazil.

Road Building in the United States—2 reels, 1,784 feet, 27 minutes.

Methods of building the various types of highways in the United States as seen by the Pan American Highway Commission on a tour of this country.

A Highway of Friendship—2 reels, 1,796 feet, 27 minutes.

Reception of the Pan American Highway Commission by Federal officials in the National Capital and by the officials of the various eastern and southern states.

Wheels of Progress—1 reel, 926 feet, 14 minutes.

An attractive educational film showing the horse-drawn traffic in 1897 and the improvement in transportation made by the automobile and better roads.

#### National Park Roads

These national park roads are being built by the Bureau of Public Roads for the National Park Service of the Department of Interior.

Roads in Our National Parks—1 reel, 875 feet, 13 minutes.

Scenes of roads in Glacier National Park in Montana, Rocky Mountain National Park in Colorado, Mount Rainier National Park in Washington, in the Grand Canyon of the Colorado, and in Yosemite National Park in California.

The Men Who Build the Roads—1 reel, 983 feet, 15 minutes.

Shows the life of the engineer, contractor, workmen, camp cook and others while constructing the Glacier National Park road in Montana.

A Road Out of Rock—1 reel, 866 feet, 13 minutes.

Hewing a road out of solid rock in the famous "Garden Wall" in the Glacier National Park, in Montana.

Rocky Mountain Park Roads—1 reel, 815 feet, 12 minutes.

Construction scenes and completed sections of scenic road in the great tourist resort of Colorado.

New Roads in Mount Rainier—1 reel, 589 feet, 9 minutes.

Scenes in Mount Rainier said by John Muir to be





Underpass of A. C. L. Railroad. Project 50-A, Road 14, in City Limits of Palatka.

the noblest fire-mountain-volcano that ever blazed like a beacon along the Pacific Coast.

Yosemite's New Roads—1 reel, 652 feet, 10 minutes.

The construction of a concrete road into the celebrated scenic attraction of California.

#### Highway Research

Impact of Traffic On Roads—1 reel, 861 feet, 13 minutes.

Tests made by the Bureau of Public Roads to determine the effect of the pounding of motor-vehicle wheels on road surfaces.

The Bates Road Tests—1 reel, 994 feet, 15 minutes.

The story of one of the most important road tests in history, and its conclusion—the thickened-edge design of pavement.

## A Big Year in Road Building

**U**NDER the above head, the U. S. Department of Agriculture, through its information bureau and press service, issues the following statement:

Road construction in 1928 will at least equal and probably slightly exceed the highest mark recorded in any preceding year, according to reports received by the Bureau of Public Roads of the United States Department of Agriculture and made public by the bureau.

Improvement of the State and Federal-aid highway systems under the supervision of the highway departments of the several states will go forward during the season now opening with a construction of more than 20,000 miles of surfaced roads and about 8,000 miles graded and drained.

The State reports also indicate that at least 240,000

miles of the total of 288,000 in the State highway systems will be maintained this year under the supervision of the State highway departments, a fact which should insure the traveling public a high degree of real service.

Funds estimated as available for expenditure during the year by the State highway departments are about 25 per cent greater in total amount than similar estimates indicated at the beginning of last season. Although it is not possible, so early in the season, to anticipate closely the yield of gasoline and motor vehicle taxes and other sources of revenue, it is practically certain that the funds available to all State highway departments for construction and maintenance of roads and bridges will exceed \$750,000,000, and local revenues, expendable by county and local authorities, will swell the highway total to upward of \$1,300,000,000.

Details are not available concerning the work to be done by county and local authorities. It is anticipated that the year's work under State supervision will result in the construction of nearly 9,000 miles of hard-surfaced pavements, upwards of 12,000 miles of less expensive surfaced roads, and 8,000 miles of roads adequately graded and drained.

#### All Forgiven

"What is your worst sin, my child?"

"My vanity—I spend hours before the mirror admiring my beauty."

"That is not vanity—that is imagination."—Nebelspalter (Zurich).

Some folks are born great, some achieve greatness, and some are blacklisted by the D. A. R.—St. Louis Post-Dispatch.



## A Seventy Million Dollar Southern Achievement

Old Spanish Trail a Remarkable Record of Construction from Florida to California Over Water Many Miles

By Ford Foster, in Kentucky Highways

THE Old Spanish Trail is open as an all-year, all-weather highway from St. Augustine, Fla., through the old Spanish cities of Pensacola, Mobile, New Orleans, San Antonio, El Paso, Las Cruces and Tucson to San Diego, Cal. It threads the Gulf of Mexico country and the lands of the Mexican border and opens new playground area across from Florida to California. But it has required \$70,000,000 to open this highway to uninterrupted travel. Financing and engineering problems not paralleled on any other national trunk line were conquered. Two-thirds of the drainage waters of the North American continent flow into the Gulf of Mexico and rivers have been bridged near the Gulf where the flood waters are high and menacing and bays are miles wide. Plains, deserts and mountains in the West added to the problems.

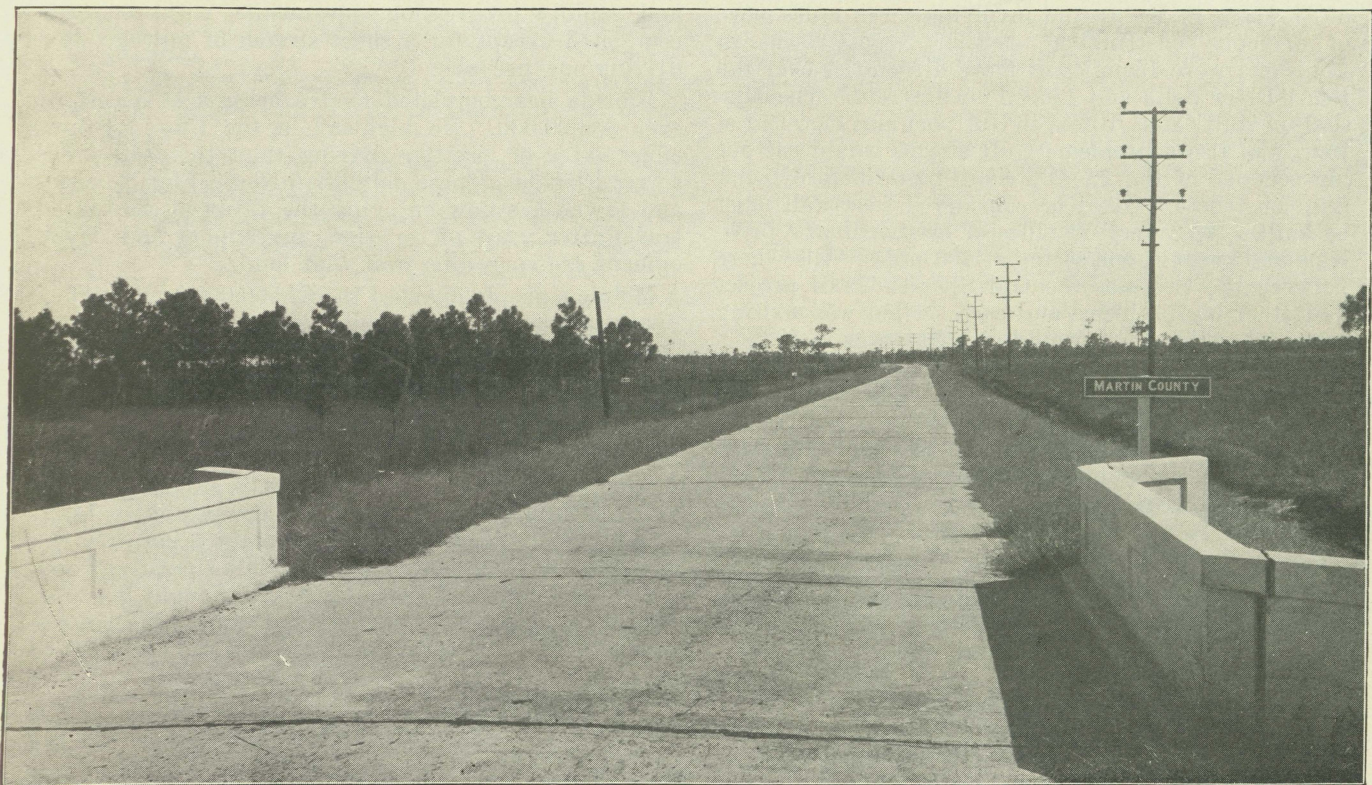
In the past the Spanish *conquistadores* roamed this Southern region and left behind relics of romantic explorations and established many interesting settlements. The faithful *padres* built their missions and established their *rancherios* and their communal industries so far from their homelands that men today, looking back, marvel at the faith and ability that carried them so far. Something of that matchless spirit lives again in that Southern borderland country and in the past decade it held groups of men and women to tasks scattered across the continent. They were separated from one another by untravelable areas but

today they are linked together by a great trunk line, and the American people have now opened to them a new world.

### Formidable Undertakings

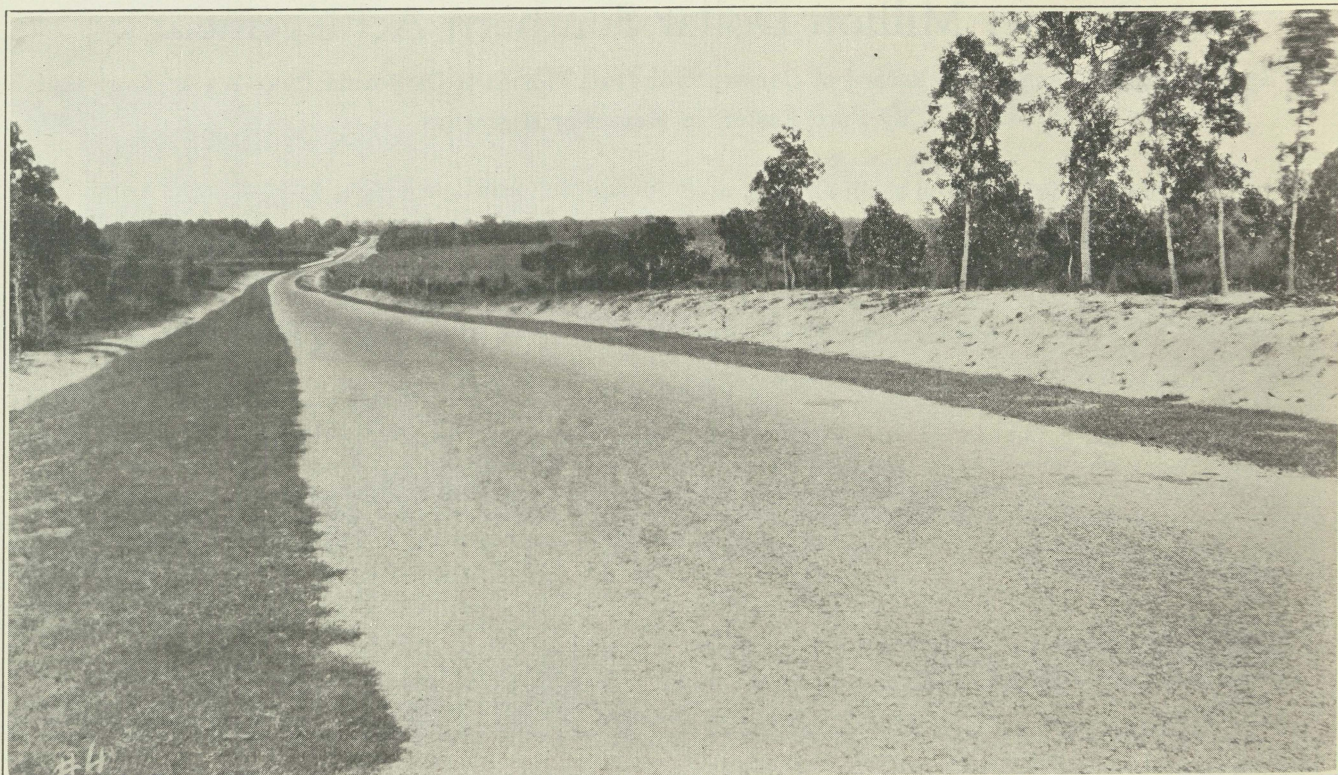
So formidable was the problem that as late as 1922 highway officials did not recognize the project as practical and the local financing was beyond the dreams of people born and bred to limited areas. Today the records show \$32,000,000 spent and a paved highway nearly complete on that sector from New Orleans to St. Augustine, a distance of 662 miles.

Harral Ayres, the Old Spanish Trail managing director, studied all the country through which the highway was to be built, studied it as a railroad organization would study territory into which it would extend. He found the costs of construction discouraging compared with the apparent capacity of the people to finance, but he also found a country rich in great seaports, in agricultural possibilities, in playground and recreational opportunities; a land that was the last and greatest frontier on the continent for home-seeking, settlement and investment. So it was resolved the Old Spanish Trail must be battled across the barriers of the East. He established eastern headquarters at Mobile, Ala., and in March, 1922, a Four-State Conference was called at Mobile to plan the construction from New Orleans to Pensacola. Prompt construction across that sector was necessary if the projected Old Spanish Trail was to be made the



Project 694, Beginning of Project, looking South.





Project 663. Road 5, Citrus County.

Southern national travelway from sea to sea. Seven years had passed since the Old Spanish Trail had been planned on paper. In a straight line the distance from New Orleans to Pensacola is 200 miles, but in that short distance were Mobile Bay, nine miles wide; the Pascagoula River basin, Biloxi Bay and the Bay of St. Louis in Mississippi involving seven miles more of difficult construction; east of New Orleans in Louisiana were 15 miles of more difficulties over the Pearl River delta and Lake Ponchartrain. The Mississippi Gulf Coast, Biloxi to Gulfport and Pass Christian, was also a problem; Gulf storms would eat out big sections of the 22-mile shore road; before trunk line construction could be considered a seawall must be built. Here were 53 miles of extraordinary problems and costs in one sector of 200 miles. Elsewhere between the two seas the Old Spanish Trail project had other big problems and each section was waiting to see what the others would do. This was in 1922.

Between New Orleans and Pensacola the gulf, the bays, rivers and estuaries were enticing factors and that group of gulf cities were potentially rich in the things men need or enjoyed, but the same waterways prevented inter-community communications or automobile connection with the outside world.

\* \* \* \* \*

That Mobile Four-State Conference showed the sturdy timber of which Southern people are made. In their hearts they said with St. Peter, "Silver and gold we have none, but such as we have we give unto thee," and they went forth to conquer. The \$2,500,000 Cochrane Bridge across Mobile Bay has been built, and pavement reaches from Mobile west to Bay St. Louis, Miss. Bridges over the Pascagoula River and the Bay of St. Louis in Mississippi, and across Lake Ponchartrain near New Orleans, were recently completed at a cost of \$6,000,000. The average cost per

mile across Mississippi will be \$65,000; across Alabama, \$90,000; across Florida, \$40,000. Not a ferry remains between New Orleans and St. Augustine. All the highway except one county in Alabama, one in Mississippi and one in Louisiana will be first-class pavement before the end of 1928—all this is financed and rapidly progressing; meanwhile, with roadbeds completed except for a short stretch of mileage, fine driving now prevails.

Florida has completed twelve bridges at a cost of over \$3,000,000. No highway in the United States offers safer or prettier driving than this 440 miles across Florida. Those delightful North Florida cities and towns are now enjoying the favor of contented travel after years of isolation; investment and development are spreading over that land.

Mobile's people financed the \$2,500,000 bridge when finally awakened to the value of the great travelway and the city now promises to become a focal-point of important feeders to this Southern trunk line. It celebrated the dawn of the new day by asking the State to develop its port and now Mobile Bay is becoming the Port of Alabama with \$10,000,000 being invested in modern facilities. Mobile County is climaxing these achievements by voting \$4,500,000 for paved roads.

Nothing in the South so completely illustrates the new order as this renaissance of Mobile since the Four-State Conference of 1922, when the thought was put over that that country was entitled to its place in the sun by right of natural resources and the capacity to achieve.

Along the Mississippi Gulf Coast another epic is being written. Seawalls, bridges and boulevards are the contribution of the cities of Biloxi, Gulfport, Pass Christian and Bay of St. Louis to the Old Spanish Trail. In 1922 the people of that section urged O. S. T. officials to approve the plans then in mind to build





Road 27, Tamiami Trail looking West from Coral Gables.

a nine-foot concrete road. Today, as the result of the greater plans, that coast claims \$60,000,000 of new investments.

Over in New Orleans those people are preparing to become the key tourist city of the Southern borderlands.

The Sabine River bridge between Orange, Texas, and Lake Charles, La., is three and one-half miles long and including approaches cost \$1,000,000. The river there in flood seasons is miles wide for weeks at a time.

East Texas has been a mud and barrier section for years. The nation's travelers long since learned to avoid all South Texas because of the grief experienced along that East Texas corridor on account of the many rivers to be crossed. But the nation's travelers must now be told how these people have risen to great achievement and how travelers now sweep across East Texas on concrete pavement and great bridges and how all South Texas is another open world, alive with homeseekers and investors. It is costing \$7,000,000 to cross 140 miles of that East Texas.

#### FLOOD DAMAGES TO HIGHWAYS AND BRIDGES

**H**IGHWAYS and bridges in the flood districts of Illinois, Missouri, Kentucky, Tennessee, Arkansas, Mississippi and Louisiana were damaged to the extent of \$3,949,900 by the recent overflowing of the Mississippi River, according to the American Road Builders' Association. Most of the roads

damaged have already been repaired in some degree.

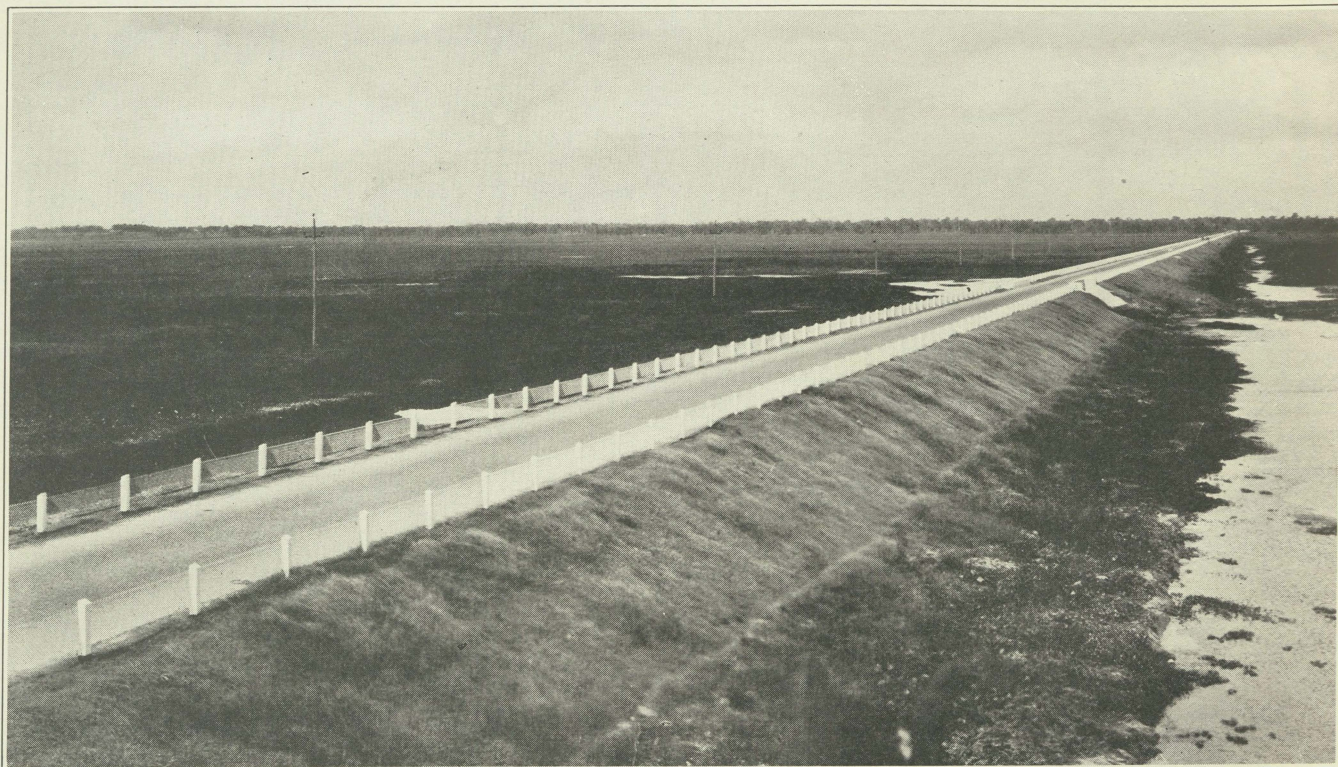
Improved highways withstood the onrush of water without serious damage, while roads without improvement were in many cases virtually wiped out, causing an expensive delay in traffic and curtailing the movement of necessary food and shelter supplies. Bridges were completely destroyed in sections where the foundations were not constructed to withstand the swift moving waters.

The damage to public highways and bridges has been estimated at \$2,738,100, and the damage to privately owned roads and bridges at \$1,211,800. The loss constituted less than 1.7 percent of the estimated flood losses of \$236,334,414 as compiled by the Port of New Orleans. The most serious loss in the flood was that of growing or newly harvested crops which totalled approximately \$73,541,000.

The immediate construction of an adequate highway system designed to withstand the maximum flood waters in those sections subject to overflow has been urged. The existence of these roads, it is stated, will facilitate the salvage of personal property, protect human life, and permit speedy reconstruction of damaged areas.

Good roads in the Florida counties struck by the hurricane last year were opened for motor travel within a few hours after the storm had subsided. The quick movement of first aid supplies and rations over these roads unquestionably was responsible for the saving of many lives, it was said.—Badger Highways.





Payne's Prairie Causeway, Road No. 2, Alachua County.

## Fifty Nations to Send Highway Leaders to United States Meet

**A**T THE invitation of the United States Government, the leading highway engineers, economists and administrators of the world will meet in Washington in 1930 to attend the Sixth International Association of Road Congresses.

Fifty nations and five continents are expected to send hundreds of delegates to the meeting, which will be historic in that it will mark the first time the International Road Conference has assembled in the Western Hemisphere.

The resolution authorizing the invitation has been signed by President Coolidge, having passed the Senate and the House of Representatives under the leadership of Senator Lawrence C. Phipps, of Colorado, and Representative J. Charles Linthicum, of Maryland. Senator Phipps, as a member of the Senate Committee on Post Offices and Post Roads, sponsored the measure in the upper chamber, while Representative Linthicum, of the Committee on Foreign Affairs, introduced the bill before the House and followed it through committee hearings.

The formal invitations will be transmitted by Secretary of State Kellogg, by direction of Road Congresses, the official name of the organization. The association had previously voted to accept the invitation if extended.

The willingness of the association officials to bring the sixth conference to the United States is held to be significant. It is recognition on the part of the Old World, with its background of centuries of highway building, of the new order of achievement of the New World in the mass production and methods of administration of highway construction and maintenance. While highway engineering on the Continent ante-

dates the roads of the United States by thousands of years, the utility, science and economic benefits of highway transportation, it is held, have reached their highest fruition in this country, and it is the desire to observe these results, it is believed, that prompted the engineers of Continental Europe and Asia to accept the invitation of the United States.

At the Fifth International Conference at Milan in 1926, the delegates from the United States tentatively advanced the project of bringing the next conference to the United States. Their overtures, expressing the hope that it would prove possible for the United States to extend and the conference to accept an invitation for the next meeting to be held in Washington, were cordially received. The delegates from the United States at the Milan Conference were Thomas H. MacDonald, chief of the Bureau of Public Roads and chairman of the Highway Education Board; Pyke Johnson, executive director of the Pan-American Confederation for Highway Education; H. H. Rice, treasurer of the National Automobile Chamber of Commerce; J. N. Mackal, chairman of the State Roads Commission for Maryland; Paul D. Sargent, State Highway Engineer for Maine, and H. H. Kelly, European commercial attache from the Department of Commerce.

Senator Phipps, commenting on the importance of inviting the world engineers to the United States, said:

"For some years Congress has realized the vital necessity of good roads, and it is now highly desirable to encourage such activities in other countries. The International Roads Congress is world-wide in its scope, and our invitation will continue the leadership



of the United States in the field of highway development.

"I believe that the proposed conference will prove of great value to this country and to every nation which participates in it. These meetings turn the minds of people to peaceful pursuits, tend to promote international good will, and add greatly to the nation's prosperity and development."

Representative Linthicum has long been a friend of highway improvement, not alone in his state of Maryland, but for the nation at large. He also has vigorously sponsored the proposal that the United States make available to other nations of the world her experiences in highway building and highway transport.

Discussing the invitation, Representative Linthicum said:

"The United States has made wonderful progress in the building of good roads, and it is highly essential that we transmit this knowledge to other lands. We have many things to tell them about our methods of building roads. The proposed international conference will help social conditions, accentuate trade, and better consolidate our position abroad."

The request for the invitation was formally made of President Coolidge by Roy D. Chapin, United States delegate to the International Commission of the Conference, which met last year in Paris. Mr. Chapin is president of the National Automobile Chamber of Commerce. Other organizations that hastened to go on record favoring the proposed conference include the Highway Education Board, the American Association of State Highway Officials, the Rubber Association of America, and the Pan-American Confederation for Highway Education, the latter an international organization, but restricted to the Western Hemisphere.

Each of the government departments and bureaus concerned with road building, industry, or international affairs, also approved the invitation.

Mr. MacDonald, commenting on the proposed conference said:

"This nation has much of valuable experience in highway matters to share with other countries. As a nation, we have profited from the experiences of older nations.

"The United States has made her great contribution to civilization. We believe we have done so in the political field, in our form of government. But the first field in which our leadership will be easily conceded is that of engineering achievement, of organization and mass production. This is the great contribution the United States has made to civilization, measured by standard of living.

"It will be a salutary achievement if the same principles of engineering organization and quantities of production which have been so successfully demonstrated in the United States may be applied universally to produce adequate mileage or serviceable highways at the lowest possible cost. The proposed international conference, I believe, will further this aim."

—Arizona Highways.

#### One Last Request.

Doctor—"About nine patients out of ten don't live through this operation. Is there anything I can do for you before we begin?"

Dusky Patient—"Yessah. Kindly hand me mah hat."—"Selected" by the Congregationalist.

## Wide Roads and the Future

THE man who follows paved road construction as a business or from general interest cannot help but be impressed by the number of wide roads being planned or built in all parts of the country. Just a few years ago Woodward Avenue, Pico Boulevard or Boston Post Road were studied avidly, not for their construction details, financing or traffic handling ability, but rather for the novelty of their scheme and the newness of the idea. Today intimate studies into wide road feasibility, cost, ability to handle traffic, location, safety and other phases are under way in most states.

Without exception the super-highway is the infant prodigy and brain child of engineers connected with building highways capable of handling the heavy traffic around large centers of population or between important centers of population or industry. In increasing numbers, super-highways are being built by the smaller cities or as stretches on important interstate and intrastate roads. It is not unusual to read of wide roads being built by communities which a few years ago would have been content with two or three radiating average-width highways.

The increase in number of motor vehicles has not been solely responsible for this adoption of wide roads by smaller cities. Engineers now know and have surveys to back their statements that paved roads attract traffic. A road wide enough to accommodate traffic one year may be wholly inadequate five years later. Engineers who sense this basic truth are planning for future traffic rather than for the number of vehicles now operating over their roads. It is not to say that pavements should in 1928 be built wide enough for the traffic of 1933, but rather that provision for future traffic in the form of wide rights-of-way, elimination of grade crossings, blind or sharp turns, poor location, etc., should be thought of and incorporated into 1928 road plans.

There is, too, the fact that one wide road will not serve a community unless there is only one entrance direction into that city. Los Angeles County, where one of the first wide roads was built, has now built or has under plan at least six roads that could be termed super-highways. The Detroit area, site of the first super-highway, now has three super-highways built and fifteen planned, all on 204-foot rights-of-way. Chicago has 13 radiating highways with 40-foot pavements either new construction or widened from old 20-foot roads.

All these super-highway webs are around large cities, but Maine, Florida, Connecticut, New Jersey, Tennessee, Washington and other states can now point to their super-highways serving locally heavy traffic. This growing usage of wide roads to care for increasing traffic congestion indicates one thing—that the wide road is no longer the unusual, but the ordinary and will be more ordinary within the next five years. Traffic surveys are going forward in many communities, studies of road needs will be undertaken in many more communities during the next few years. These studies will probably show that wide roads are already needed or if not now of pressing importance are likely to be shortly. Provision for these networks of super-roads should be made this year for each additional year means extra cost, probable delay, and no forethought for the future. The wide road is the coming artery of fast, through motor travel.—Concrete Highways and Public Improvements.





Project 613, Road No. 5, Sarasota County.

## The Arlington Memorial Bridge

**President Andrew Jackson's Dream of Spanning the Potomac to Be Fulfilled—Construction Under Way on Project, Which, When Completed, Will Cost Nearly \$15,000,000.**

A SPLENDID dream, conceived by President Andrew Jackson about 80 years ago and made more appropriate by the Civil War and its outcome is now well on its way to completion in the beautiful Arlington Memorial Bridge being built to connect the Lincoln Memorial, in the national Capital, with the former estate of the great Confederate leader, Robert E. Lee, across the Potomac in Virginia.

On July 4, 1851, Daniel Webster said of the plan: "Before us is the broad and beautiful river, separating two of the original thirteen States, which a late President, a man of determined purpose and inflexible will, but patriotic heart, desired to span with arches of ever-enduring granite, symbolical of the firmly established union of the North and the South. That President was General Jackson."

If it was appropriate then, before the Civil War was fought, to connect two of the original thirteen States by a symbolic bridge over the river separating them, how much more appropriate it is today to symbolize the indissoluble union by connecting the Southern State—and that particular spot in the Southern State that was the home of the greatest of the Confederate leaders—with the national capital;

and especially to link it with the memorial to the great man who guided the Union through the bitter days of the war that so nearly wrecked the Union.

But aside from this sentimental value of a memorial bridge between the old Lee estate and the Lincoln Memorial, probably the chief function of the bridge today is to serve as a connecting link between the city of Washington and the national cemetery at Arlington. Moreover, it will be a link in the Lee Highway, stretching across the continent to Los Angeles, and in that highway will provide a magnificent entrance to the city of Washington.

The bridge will have nine spans, a draw span in the center with four graceful masonry spans on each side, giving a total length of 2173 feet. The roadway will be 60 feet in width, with a 15-foot sidewalk on each side, making a total width of 90 feet in the clear.

Construction will be of reinforced concrete faced with granite to harmonize with the granite base of the Lincoln Memorial. That for the piers and abutments—\$300,000 worth of it—came from Stone Mountain, near Atlanta; a peculiarly appropriate source, since it is on the opposite side of that immense outcrop that the great Confederate Memorial,



with Lee at its head, is being carved. The granite for the superstructure will come from Mount Airy, N. C. \$1,500,000 is the value of such granite called for by the contract.

The design of the bridge is simple, dignified and beautiful. The center span, which is a bascule draw, is identical in design with the others, and when closed, can scarcely be identified as a draw span.

The project that is designated as the Arlington Memorial Bridge includes the parking of much of the land about each end, to make the bridge merely one unit in a magnificent, unified memorial scheme. A traveler approaching Washington from Virginia by way of the Lee Highway must pass over Arlington Heights. At that point he gets his first view of the bridge. In the distance lies the Potomac river; beyond it stretch green, beautifully landscaped grounds from which rises the knoll crowned by the splendid Lincoln Memorial, with the lofty needle-point of Washington Monument towering beyond it. The center-line of the Mall laid out about the Washington Monument and the Lincoln Memorial is also the exact center line of the stretch of the highway approaching the river, and as one draws near, the graceful lines of the bridge will appear at an angle on the right. At the river's edge the highway turns to the right and runs through a park flanked by the sea wall on the right and the Arlington Memorial on the left. A short, straight stretch of roadway along the river bank—or, to be exact, down the center of Columbia Island, which lies very close to shore on the Virginia side—crosses the section that runs in a straight line from the Lincoln Memorial to the entrance of the Arlington National Cemetery. Here the Lee Highway turns to the left, crosses the Potomac River over the Arlington Memorial Bridge, and reaches the Lincoln Memorial and the city of Washington.

The total estimated expenditure for the bridge proper is \$7,250,000, while the cost of the completed project, including improvements to river banks, parking in highways and landscaping about both ends of the bridge, brings the total to \$14,750,000.

Construction of the arches is now under way, the piers and abutments having been completed in January. While the whole project will not be complete for seven or eight years yet, it is expected that the bridge will be thrown open to traffic in the spring of 1930.

Contracts for the bascule draw span, for paving and lighting the bridge and other work about the approaches, have not been let. Plans for the bascule are about complete, and contract will be let shortly as the bascule is to be finished simultaneously with the roadway. By 1935 the whole comprehensive plan should be completed.—Manufacturers Record.

## Trunk Roads Get Bulk of Traffic

**F**EDERAL aid highways, constituting 7% of the road mileage of Vermont, carry 48.3% of the traffic, according to a survey made by the U. S. Bureau of Public Roads. There are 1043 miles of federal aid routes in Vermont with an average traffic per day of 702 vehicles.

The next class, called "numbered state aid routes," constitute 6.3% of the total mileage and carry



Project 613, Sarasota County.

17.9% of the traffic. There are 925 miles of such routes with an average daily traffic of 293.

Third comes the unnumbered state aid routes, which constitute 17.1% of the roads and carry 21% of the traffic. There are 2494 miles of such routes with an average daily traffic of 128 cars.

The town roads constitute 69.4% of the road mileage of the state but they carry only 12.8% of the total traffic. There are 10,120 miles of such routes with an average daily traffic of 19 vehicles.

A similar survey made by the federal bureau in Ohio a year ago showed that the 11,000 miles of state highways carried an average of 538 vehicles per day, or 57.7% of the total traffic, 22,991 miles of county highways carried 132 vehicles per day or 29.6% of the total traffic, while 50,893 miles of town roads carried an average of 26 vehicles per day or 12.7% of the total traffic.—Highway Engineer and Contractor.

## Where's the Fire?

In broadcasting the convention proceedings of the Merchant Tailors Association, WGR of Buffalo notified us that every man must have five overcoats.

Fine! Now if WGR will tell us how we can get them and still eat, everybody will be happy.—Jack Binns, in Collier's.





Project 693, Road No. 4, St. Lucie County.

## Mexico Building 780-Mile Roadway From the United States Border

**I**N VIEW of the great interest now being manifested by governments, automobile touring clubs and individuals relative to a highway connecting the United States with Latin America, the American Road Builders' convention at Cleveland, Ohio, brought to light many interesting facts.

Among the 25,000 delegates to the Cleveland convention were numerous engineers and road builders from the Latin American republics. Mexico, however, sent to the convention the largest number of representatives, headed by Senor Ingeniro Antonio Madrazo, an official of the national highway commission of Mexico. Not only were reports presented relating to Mexico's road building program but motion pictures gave to the convention delegates intimate glimpses of existing highways and of other roads in various stages of construction. Of Mexico's plan for a modern highway from Nuevo Laredo, on the border of the United States, to Mexico City, a distance of 780 miles, it was shown that something more than 200 miles of this road has been graded and made passable for machines—that is, a trifle further

south than Monterey. From the latter city, the route to the Mexican capital lies via Victoria and Pachuca. The beginning of 1928 sees actual construction work on various divisions of this great highway.

Another notable stride in highway building in Mexico is the recently completed road from Mexico City to Acapulco, a distance of about 200 miles. This highway not only opens direct road communications between the capital and the Pacific port of Acapulco, but provides a motor route extremely interesting and picturesque for tourists. Although only open a short time considerable motor traffic has developed over this road.

It was also shown at the Cleveland convention that during the last two years funds available for road building in Mexico have increased 90 percent over previous years. Conservative estimates show that this revenue derived from the tax on gasoline is likely to continue increasing in the same or greater proportion during the next few years.—Southern Motor News.

### VIRGINIA INCREASES GASOLINE TAX

An increase in the gasoline tax from  $4\frac{1}{2}$  to 5 cents a gallon took effect in Virginia in March. This makes six States that collect a nickel a gallon on gasoline for good roads, but even this toll amounts to only  $\frac{1}{4}$  cent a mile for many cars. It is insignificant compared to the tolls which were charged when private toll roads existed. These were usually three cents a mile for a team and wagon, and frequently more.

Seven states collected more than ten million dollars through the gasoline tax in 1927, according to figures collected by the U. S. Bureau of Public Roads. California took in \$22,467,000; Ohio, \$19,910,481; Pennsylvania, \$17,296,333; Texas, \$15,650,841; Michigan, \$14,260,564, and Indiana, \$10,133,568, each on a three-cent levy. Florida, with a five-cent tax, collected \$10,980,000. Total revenues from gas taxes in the United States in 1927 were \$258,838,813.—Nation's Traffic.



## Claude Nolan's Amazing Trip Into Key West

**A**UTOMOBILE owners of this section in particular are still expressing amazement over the remarkable run which Claude Nolan made from Miami to Key West last December across the famous Florida East Coast overseas railway in a La Salle roadster. With Mr. Nolan on the trip was Kenneth Goodson, who served as a relief driver.

The firm Claude Nolan, with headquarters in Jacksonville, is distributor for Cadillac and La Salle cars in Florida and South Georgia.

After completing all preliminary arrangements the two men left Miami on the morning of December 23, and arrived in Key West on the following afternoon. The sturdy La Salle was the first car to reach this southernmost city under its own power.

Officials of the Florida East Coast Railway extended full cooperation in order to make the run the success that it was, arranging train schedules so that the La Salle would not be interrupted on its perilous journey across the many and long trestles.

A special train, loaded with newspaper and news reel photographers preceded the roaster in order that they might better be able to note every detail of progress as the car bounced its merry way across the ties.

"The trip was made for two outstanding reasons," said Mr. Nolan in speaking of the run. "First, I wanted to test the stamina of this new Cadillac product and second, I wanted to be at the wheel of the

first car that went into Key West under its own power."

The trip was completed without incident excepting at one place where both left wheels slipped from the ties and the car's failure to plunge into the sea thirty-five feet below was considered nothing short of miraculous. Despite the fact that the greater part of the run was over railway ties, the car needed no attention with the exception of three tire replacements which were torn by railway bolts extending from the tracks.

Over the high trestles the left wheels of the La Salle had a clearance from the end of the ties of only about four inches, necessitating the most careful of driving at all times.

Mayor E. G. Sewell headed a large delegation which bade the party good-bye when they left Miami and another large group of civic officials met the car at Key West.

The same La Salle which made this trip led the good-will tour from Jacksonville to Key West in February, marking the opening of the Atlantic coastal highway from Maine to Key West. A continuous motor journey the entire distance is now possible because of the inauguration of ferry service between the various Florida Keys. It was driven in February by A. W. Johnson, general manager of the Claude Nolan organization in Jacksonville.—Southern Motor News.

## Canada's Road Building Program, Begun in 1919, Now Virtually Complete

**V**IRTUAL completion of Canada's road building program, begun in 1919, was accomplished in 1927, according to the recently published annual report of the Commissioner of Highways. Co-operation between the Federal and Provincial governments of Canada, given under the Canada highways act, made possible the successful carrying out of the road program.

The next few years may see the completion of a trans-Canada highway system which would link all the provinces in the Dominion.

Up to the end of March, 1927, 7,436 miles had been completed out of a total of 8,415 provided under the agreement. This mileage was constructed under the provisions governing the federal subsidy whereby the Dominion Government undertook to furnish 40 per cent of the cost, the provinces taking care of the remaining 60 per cent. The federal appropriation amounted to \$20,000,000 and the estimated cost of the highways was \$48,990,792. Of this the Federal Government in March last had provided \$18,775,602 out of an estimated dominion aid of \$19,596,388.

All provinces moved eagerly to take advantage of the grant and co-operated up to the full extent so that the accruing benefits are spread generally over the dominion. The total amounts received by the provinces follow: Prince Edward Island, \$603,455; Nova Scotia, \$1,468,720; New Brunswick, \$1,163,845; Quebec, \$4,748,420; Ontario, \$5,824,005; Manitoba, \$1,345,219; Saskatchewan, \$1,684,394; Alberta, \$685,589, and British Columbia, \$1,251,955.

Proportionate expenditure by the provinces does not, however, represent the extent of their engagement in new road building in the period. The federal subsidy administered further stimulus to what was already a brisk activity and other construction has been carried out on a rising scale, with a peak reached in 1926 when 26,071 persons were employed in road construction throughout the dominion, a total greater than in any of the previous seven years. The total amount spent on the improvements and maintenance of Canadian roads during 1926 was approximately \$45,500,000, some additional 5,788 miles of road being improved during the 1926 season at an outlay of \$29,585,000.—Nation's Traffic.

### Less Familiarity

The Anti-Nickname Society, which recently convened in South Squeedunk, has passed a resolution to abolish all nicknames from the English language. Should said resolution be adopted we may soon expect to hear of:

William-'o-fares.

Roberted Hair.

Danieldruff.

Dorothy and Dash.

Arthur for Arthur's sake.

Katherine-dids.

Lumber Mildreds.

Up and at Emily.

Busy as a Beatrice.

Long Jeanettes.

Emanuel thanks.

Thomas and Jeremiah.

Here's Howard!—Judge.



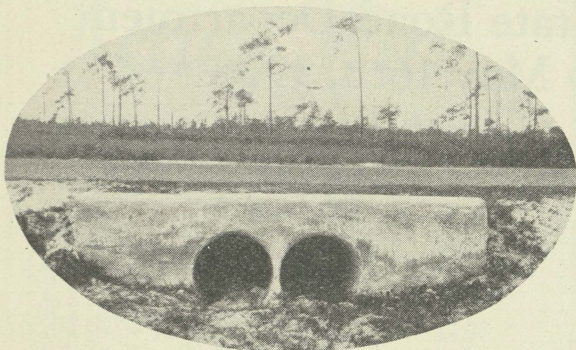


Project 562-B, on Road 8, between Frostproof and Avon Park.



Project 694, Road 4, Martin County, entering Stuart from the North.





*Twin 30" Armco Culverts  
under a paved highway in  
Charlotte County, Florida.*

Let us tell you where you can see some permanent culvert installations near you. Convince yourself that Armco Culverts are what you need!



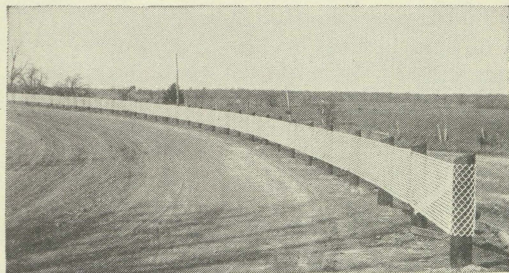
**DIXIE CULVERT & METAL CO.**  
JACKSONVILLE, FLORIDA



## Charlotte County is a Splendid Example!

**A**RMCO Corrugated Culverts—paved at the bottom where the wear comes—are **PERMANENT** drainage structures. If you plan a good road, you must have a good foundation, and you can't go wrong with tried-and-proven Armco!

### AMERICAN LIFE NET ROAD GUARD



**Passes all Federal and  
State Specification.**

**Supplied Painted and Burlapped.**

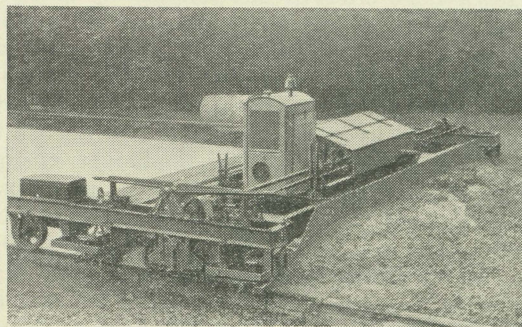
**Analysis on File With State  
Road Department.**

**Corrugated Metal Culvert Pipe.**

LET US QUOTE

**Southern Metal Culvert Co.**  
Stuart, Florida

### Road Building Delays are Not Charged to Finishing with an ORD on the Job



The reliability and the speed of the ORD Concrete Road Finisher excuse it of all blame for road building delays. About the only time the ORD is idle is when the mixer can't feed enough concrete to keep it going. If time is a factor in your road building jobs use an ORD and be on the safe side.

Learn More About This Machine From

**A. W. French & Company**

*Manufacturers of the ORD Concrete Road Finisher*

8440 Lowe Avenue

Chicago, Ill.

#### REPRESENTATIVES

Burress-Clark Machinery Co.  
Morgan & Hampton Sts.,  
Tampa, Florida

Contractors Equip. Co.  
2315 No. Miami Ave.,  
Miami, Florida



## Contracts Awarded by State Road Department January 1st, 1928, to May 16th, 1928

Contractor—	Project No.	County—	Length Miles	Length Feet	Contract + 10 %	Type
Sutton Bros. ....	55-B	Alachua .....	.....	457	\$ 54,272.17	Concrete
General Const. Co. ....	677-D	Levy .....	.....	1,335	43,000.98	Timber
Frost Const. Co. ....	710-B	Hillsboro .....	.....	260	54,775.16	Concrete
Sutton Bros. ....	764-B	Suwannee .....	.....	113	19,043.82	Conc. Overh'd.
Duval Engr. & Contr. Co. ....	677-D	Levy .....	8.91	.....	110,370.35	R. B. S. T.
E. F. Powers Const. Co. ....	710-C	Hillsboro .....	12.69	.....	95,125.45	C. G. & G.
B. Booth .....	755	Polk .....	11.22	.....	58,518.86	C. G. & G.
Little & Lee .....	757	Polk .....	10.26	.....	63,516.17	C. G. & G.
Little & Lee .....	758	Polk .....	8.34	.....	46,380.34	C. G. & G.
Gilbert & Hadsock .....	732	Polk .....	8.94	.....	57,077.26	C. G. & G.
C. G. Kershaw Contr. Co. ....	736	Holmes .....	8.58	.....	45,097.93	C. G. & G.
C. G. Kershaw Contr. Co. ....	709	Holmes .....	9.09	.....	53,931.71	C. G. & G.
Morgan-Hill Paving Co. ....	61-C	Gadsden .....	9.77	.....	244,581.31	Concrete
Franklin Const. Co. ....	710-A	Hillsboro .....	6.18	.....	38,592.08	C. G. & G.
E. M. Chadbourne .....	697	Escambia .....	.14	666	3,401.25	Surface
Robert G. Lassiter & Co. ....	683-A	Falm Beach .....	8.04	.....	264,999.43	Concrete
Rutherford Const. Co. ....	695	Lake .....	3.00	.....	46,992.07	R. B. S. T.
S. G. Collins .....	827	Escambia .....	8.12	.....	50,151.29	C. G. & G.
M. C. Winterburn, Inc. ....	61-A	Gadsden .....	10.00	.....	231,578.27	Concrete
Phoenix Asphalt Paving Co. ....	669-X	Collier .....	9.40	.....	28,814.77	Surface T'd.
Everglades Const. Co. ....	62-C	Osceola .....	11.83	.....	115,303.71	C. G. & G.
A. D. Weeks .....	62-A	Osceola .....	12.62	.....	83,299.72	C. G. & G.
A. D. Weeks .....	62-D	Osceola .....	12.52	.....	66,571.01	C. G. & G.
R. C. Huffman Const. Co. ....	807-A	Palm Beach .....	10.81	.....	201,713.22	R. B. S. T.
R. C. Huffman Const. Co. ....	807-C	Palm Beach .....	6.14	.....	99,923.54	R. B. S. T.
C. A. Steed & Son, Inc. ....	804	Glades .....	18.55	.....	416,083.52	R. B. S. T.
Duval Engr. & Contr. Co. ....	659	Clay .....	7.25	.....	95,449.25	R. B. S. T.
Silas Gibson .....	815	Okaloosa .....	13.58	.....	60,680.23	C. G. & G.
W. J. Bryson Paving Co. ....	819	Okaloosa .....	4.69	.....	20,979.67	C. G. & G.
W. J. Bryson Paving Co. ....	823	Okaloosa .....	9.18	.....	34,085.34	C. G. & G.
W. J. Bryson Paving Co. ....	824	Okaloosa .....	9.81	.....	59,898.02	C. G. & G.
Perkins Const. Co. ....	820-B	Jefferson .....	.....	114	4,881.25	Timber
Maddox Foundry & Mach Co. ....	743	Bay .....	.....	120	13,774.47	Timber
Total .....			249.66	3,065	\$2,882,863.62	

## Iowa to Vote on \$100,000,000 Road Bond Issue

A \$100,000,000 ROAD bond plan will be voted on by the people of Iowa at the general election next November. The special session of the Legislature, which met March 5 at the call of Governor Hammill, passed the referendum bill and adjourned March 14. The vote on the bill was 32 to 17 in the Senate and 64 to 43 in the House.

The proposed plan, if adopted by the voters, will give Iowa 4,993 miles of paved highway and permit grading and graveling the remaining 1,732 miles in the state system. It is expected that this work will be finished within six years. This will give Iowa a primary road system adequate to carry the traffic for many years to come. Gasoline and license taxes will all go into a fund to retire the bonds, except the amount which is needed each year for maintenance.

Two-thirds of the counties have voted bonds for primary road improvements, aggregating \$60,000,000. This work will go on in 1928 and 1929, regardless of what happens to the state bond bill, but if the

state bond bill passes, the county bonds will be taken over by the state and redeemed, with interest, from the primary road fund. State bonds may be issued to complete gaps through counties which have not voted bonds, or for additional work in counties which have voted bonds, until the total of the state and county bonds reaches \$100,000,000.

The bill authorizes a tax levy sufficient to pay the interest and principal of the bonds, but this is done only for the purpose of getting the low interest rates which can be obtained only if the state's credit is behind the bonds. License and gas taxes are ample to pay the interest and retire the bonds, and make it certain that no direct tax will be levied.

Iowa already has let contracts for 630 miles of paving, 500 miles of grading and 307 miles of graveling for the season of 1928, to be financed with county bonds. Passage of the state bond bill will assure building of continuous good roads on all routes through the state.—Nation's Traffic.

A psychology class in Chicago has succeeded after exhaustive researches in teaching a herd of mice to turn to the right. It is believed the secret is to place a pound of store-cheese to the right.—Detroit News.

With a new rubber bumper it is said that a motor-car running thirty miles an hour may strike a tree without damage, which, of course, indicates that it could kill a pedestrian without jarring the driver.—Boston Transcript.

We are surprised to note that the gentleman who won the tennis match at Rome was not Mussolini.—American Lumberman (Chicago).

Dental authority says sixty pounds' pressure is required to chew a sirloin steak. He must be a millionaire used to only tender cuts.—Los Angeles Times.

### Saving for a Kiddie Kar.

The real optimist, tho, is the Kansan who went to New York for a monkey-gland operation to restore his youth, and bought only a one-way ticket so he could get the benefit of a child's fare ticket on the return trip.—Juggler.



## Action With Despatch!

Have Your Bonds or Your Casualty Insurance written through an Agency famous for its immediate, intelligent and courteous service.



524 Barnett National Bank Building  
JACKSONVILLE, FLA.

## SLAG

For any Type of Concrete Paving or  
Surface Treatment

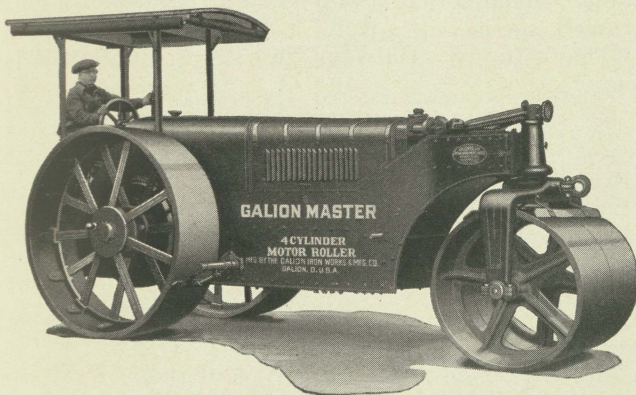
Our Woodward Plant (destroyed by fire July 6th, 1926) has been rebuilt with the most modern Crushing and Screening equipment. This new plant is producing a material unexcelled in correct and uniform sizing.

Our daily capacity from two plants is 3,000 tons, and in addition thereto, we have storage facilities for taking care of rush or emergency orders.

Write or telegraph for delivered prices.

### Woodstock Slag Corporation

807-8-9 Southern Railway Building  
BIRMINGHAM, ALABAMA



### Truly the Master of All Rollers

#### A FEW SUPERIOR FEATURES

Sturdy frame of half-inch steel plate thoroughly braced throughout.

Abundant power from 55 horse-power, 4 cylinder Climax Trustworthy Slow Speed Motor.

Smooth acting, Heavy Twin Disc Clutch.

Machine cut, heat treated gears of special alloy steel used throughout in transmission and differential.

Write for New Illustrated Catalog of Galion Road Machinery.

The Galion Iron Works & Mfg. Co. of Florida

1107-09 Virginia Drive, Orlando, Fla.

**GALION ROAD MACHINERY**  
WILL SERVE YOU BEST

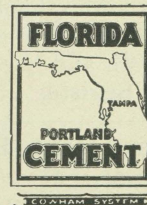


## Florida Cement

EXCEEDS

State Highway Specifications

DAILY  
CAPACITY



20000

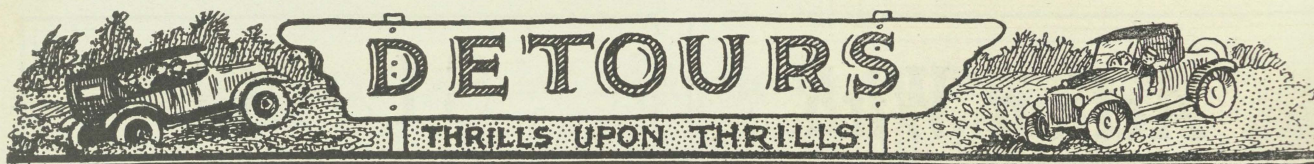
SACKS

"A Florida Product for Florida Construction"

Florida Portland Cement Co.

Tampa, Florida





### The Timid Stenog

"Now, Miss Blogg," boomed Jasper M. Whurtle, president of the Whurtle Whirlwind Laundry Co., to his new stenographer, "I want you to understand that when I dictate a letter I want it written as dictated, and not the way you think it should be. Understand?"

"Yes, sir," said Miss Blogg meekly.

"I fired three stenogs for revising my letters, see?"

"Yes, sir."

"All right—take a letter."

The next morning, Mr. O. J. Squizz, of the Squizz Flexible Soap Company, received the following:

"Mr. O. K. or A. or J. something, look it up, Squizz.

President of the Squizz what a name Flexible Soap Co., the gyys.

Detroit, that's in Michigan isn't it?

Dear Mr. Quizz, hmmm:

You're a h—of a business man. No, start over. He's a crook, but I can't insult him or the bum'll sue me. The last shipment of soap you sent us was of inferior quality and I want you to understand, no stratch out I want you to understand. Ah, unless you can ship, furnish, ship, no furnish us with your regular soap you needn't ship us no more period or whatever the grammar is and please pull down your skirt. This d—cigar is out again pardon me and furthermore where was I? Nice bob you have.

Paragraph. The soap you sent us wasn't fit to wash the dishes no make that dog with comma let alone the laundry comma and we're sending it back period. Yours truly. Read that over, no never mind, I won't waste any more time on that egg. I'll look at the carbon tomorrow. Sign my name. We must go out to lunch soon, eh?"—Judge.

### The Easiest Way

Undiscovered church history from an examination paper in a Los Angeles high school: "The Protestant Reformation was when the Protestants broke away from the Catholic Church and began to forgive their own sins."—Christian Register.

### Beating Her to It

"Henry," exclaimed Mrs. H. P. Bloop to her husband, "at the bridge club to-day I told them you had failed, owing nine thousand dollars, and then that Mrs. Mitz chimed in and said her husband had failed, owing over twenty thousand to his creditors. The cat!"—Life.

### This is Service

Newspaper Canvasser—"You advertised in our paper for a night-watchman. Did you get any results, sir?"

Shopkeeper—"I most certainly did. The advertisement appeared yesterday morning, and I was burgled last night."—Passing Show (London).

### Placing the Static

Mrs. Witsend (from stairway)—"Wilbur, for mercy's sake, turn off that radio! That woman has the awfullest voice I ever heard!"

Wilbur—"Ha! Ha! This isn't the radio, Ma. This is Mrs. Highpitch come to call!"—Life.

### Black Magic

Father (reading school report)—"Conduct, bad; reading, bad; composition, arithmetic, history, bad—bad—bad!" What is the meaning of this Gerald?"

Gerald—"I can't understand it, Dad. Do you think it might be a forgery?"—Punch.

### Tattle-Tale

Nurse—"Well, Bobby, you have a new baby brother for a Christmas present."

Bobby—"Oh, zowie! May I be the first to tell Mother?"—Boston Beanpot.

We nominate the following from The Pathfinder as this year's best paragraph: "They are putting Wilson's portrait on the \$1,000 bill—where only Republicans will see it."—Toledo Blade.

"So you are the lady who gives my wife singing lessons. What sort of a pupil is she?"

"Well, she is very apt, to say the least."

"That's funny. I always find her apt to say the most."

### Mild Static

Prof.—"Why don't you answer me?"

Fresh.—"I did, Professor. I shook my head."

Prof.—"But you don't expect me to hear it rattle away up here, do you?"—Pathfinder.

Lawyer: "Then you say that this man was drunk?"

Witness: "I do not. I simply said that he sat in his car for three hours in front of an excavation waiting for the light to turn green."—Judge.

### Mister Grandma

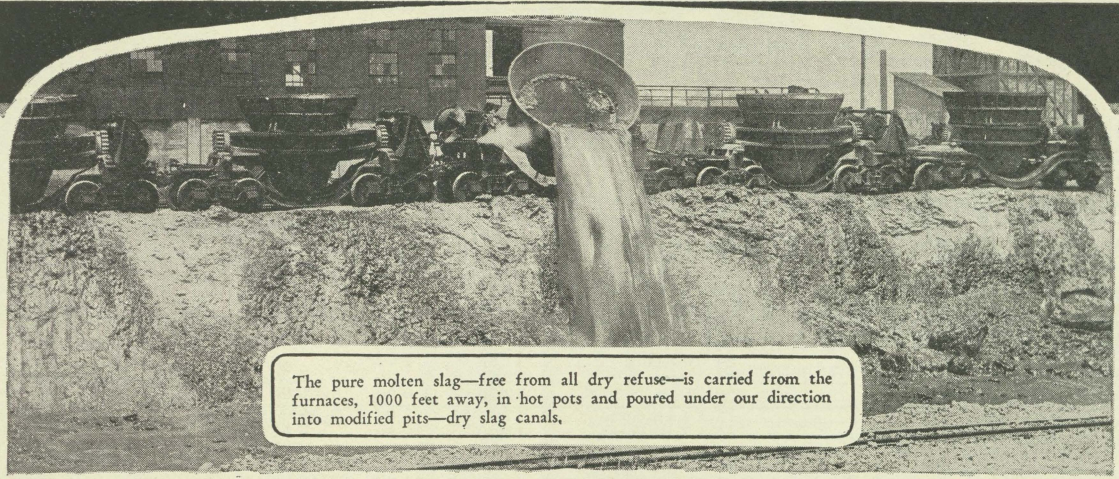
Wife—"Now that I have had my hair bobbed, I don't think I look so much like an old lady."

Husband—"No. Now you look like an old gentleman."—L'Illustration (Paris).

Deaf and dumb drivers are the safest, according to the Vancouver chief of police. So most of the drivers you meet are only half safe.—San Diego Union.

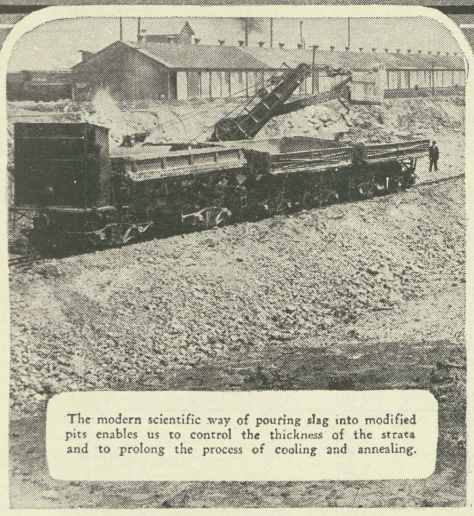
And in years to come pitying visitors to the Smithsonian will look at "We" in its glass case and say: "How in the world could the poor fellow ever have got across in a thing like that?"—New York Evening Post.





The pure molten slag—free from all dry refuse—is carried from the furnaces, 1000 feet away, in hot pots and poured under our direction into modified pits—dry slag canals.

# Scientific Preparation!



The modern scientific way of pouring slag into modified pits enables us to control the thickness of the strata and to prolong the process of cooling and annealing.



EVERY step in the preparation of basic slag follows a definite, scientific procedure.

When slag is poured in thick strata, it breaks up in much more **cubical** pieces. You steady users of

**"ENSLEY & ALA CITY"**  
**BASIC SLAG**  
CRUSHED & SCREENED

know how important that is. Also you know, from experience, that when slag is cooled slowly there is a marked increase in its solidity, toughness and strength.

That is why pure molten slag (free from all refuse) is poured under our direction into modified pits. This enables us to definitely control the thickness of the strata and definitely control the processes of cooling and annealing.

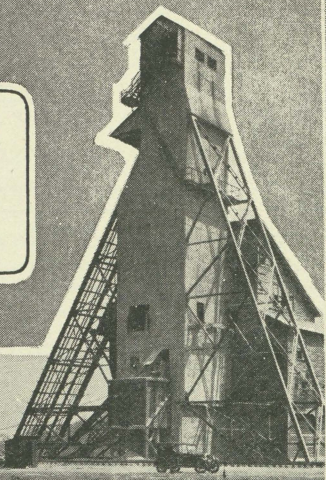
The final steps—crushing, screening and sizing—prepare the product for the particular project in which it is to be used.

**Birmingham Slag Company**

Slag Headquarters for the South

ATLANTA      BIRMINGHAM      JACKSONVILLE  
THOMASVILLE      MONTGOMERY      OCALA, FLA.

After the slag has been crushed it passes over two magnetic rolls for removal of all small pieces of free iron; then it goes to the revolving and vibrating screens for scientific sizing.





# Status of Construction


THROUGH MARCH 31, 1928.

Proj. No.	Contractor.	Road No.	County	Total Length Miles	Clearing Miles	Grading Miles	Base Miles	Surface Miles	Type	Per Cent Complete
50-A	L. M. Gray	14	Putnam	6.19	.....	.....	6.19	4.64	S.T.R.B.	96.00
50-C	N. C. Cash	14	Putnam	10.03	.....	.....	10.03	10.03	S.T.R.B.	100.00
52	W. J. Bryson Pav. Co.	1	Escambia	10.09	10.09	9.58	.....	.....	Graded	97.00
55	W. J. Bryson Pav. Co.	14	Alachua	16.77	16.77	15.93	.....	.....	Graded	96.00
61-A	M. C. Winterburn, Inc.	1	Gadsden	10.00	.....	.....	.....	1.13	Concrete	11.30
61-C	Morgan-Hill Pav. Co.	1	Gadsden	9.77	.....	.....	.....	.32	Concrete	3.30
62-A	A. D. Weeks	24	Osceola	12.52	6.26	2.50	.....	.....	Graded	20.00
62-C	Everglades Const. Co.	24	Osceola	11.83	1.77	.59	.....	.....	Graded	5.00
62-D	A. D. Weeks	24	Osceola	12.62	5.30	5.30	.38	.....	Graded	14.00
500-B	State Convict Forces	20	Bay	12.76	0.00	0.00	.....	.....	Graded	0.00
518	Barnes Const. Co.	5-A	Lafayette	17.75	17.04	12.60	.....	.....	Graded	65.00
535	L. B. McLeod Const. Co.	5-A	Lafayette	13.20	12.80	7.52	.....	.....	Graded	55.00
585	State Convict Forces	1	Santa Rosa	5.19	6.00	4.67	.....	2.50	S.T.S.C.	52.40
592	State Convict Forces	10	Franklin	8.53	.....	.....	4.73	0.00	S.T.R.B.	51.00
615	E. F. Powers Const. Co.	5	Sarasota	11.92	11.92	10.60	.....	.....	Graded	84.00
624	L. B. McLeod Const. Co.	50	Hamilton	6.23	5.98	5.36	.....	.....	Graded	89.03
640-A	West Const. Co.	4	Martin	9.00	.....	.....	4.50	0.00	S. Asph.	26.01
640-B	West Const. Co.	4	Martin	11.80	.....	.....	8.08	4.72	S. Asph.	49.40
644-A	State Convict Forces	10	Wakulla	8.50	.....	.....	0.00	0.00	S.T.R.B.	0.00
644-C	State Convict Forces	10	Wakulla	5.06	3.29	2.78	.....	.....	Graded	46.05
645	State Convict Forces	10	Wakulla	18.50	.....	.....	15.00	12.00	S.T.R.B.	85.00
651	State Convict Forces	10	Gulf	14.72	.....	.....	12.50	1.47	S.T.R.B.	79.80
654	S. P. Snyder & Son	4	Broward	6.30	6.30	6.10	6.10	1.76	Bif. Mac.	61.00
659	Duval Engr. & Contr. Co.	3	Clay	7.25	.....	.....	3.41	0.00	S.T.R.B.	39.00
669-C	R. C. Huffman Const. Co.	27	Dade	12.00	12.00	12.00	12.00	0.00	S.T.R.B.	98.00
669-D	R. C. Huffman Const. Co.	27	Dade	12.31	12.31	11.69	11.69	0.00	S.T.R.B.	95.00
669-V	H. E. Wolfe	27	Collier	19.72	17.50	17.50	16.50	10.00	S.T.R.B.	80.00
669-XZ	H. E. Wolfe Const. Co.	27	Collier	15.88	.....	.....	15.88	.32	S.T.R.B.	80.00
669-Z	Alexander, Ramsey & Kerr	27	Collier	6.48	6.48	6.48	.....	.....	Graded	100.00
667-C	Boone & Wester	13	Levy	10.16	10.16	10.16	.....	.....	Graded	100.00
667-D	N. B. Burton	13	Levy	3.05	3.05	2.84	.....	.....	Graded	85.00
667-D	Duval Engr. & Contr. Co.	13	Levy	8.91	.....	.....	6.24	0.00	S.T.R.B.	54.00
678	State Convict Forces	10	Bay	8.73	0.00	0.00	.....	.....	Graded	0.00
683-A	Robert G. Lassiter & Co.	4	Palm Beach	9.04	6.83	1.12	.....	.24	Concrete	4.00
685	Deen, Yarborough & Ebersbach	10	Franklin	18.46	18.46	18.00	.....	.....	Graded	99.00
695	Vadner & Tampa Sand & S. Co.	2	Lake	10.54	10.54	10.33	.....	.....	Graded	99.50
695	Rutherford Const. Co.	2	Lake	3.00	.....	.....	2.56	0.00	S.T.R.B.	80.00
706-B	Curry & Turner	28	Putnam	14.91	14.56	9.55	.....	.....	Graded	70.00
708	Hardee-Fisher Co., Inc.	11	Jefferson	7.98	7.98	6.39	.....	.....	Graded	84.00
709	C. G. Kershaw Constr. Co.	39	Holmes	9.09	8.63	2.27	.....	.....	Graded	35.00
710-A	Franklin Const. Co.	17	Hillsboro	6.18	4.94	3.58	.....	.....	Graded	54.20
710-C	E. F. Powers Const. Co.	17	Hillsboro	12.69	8.12	3.81	.....	.....	Graded	33.00
714	W. J. Bryson Pav. Co.	28	Union	10.21	10.21	9.70	.....	.....	Graded	97.20
715	Sellers Const. Co.	28	Union	3.70	3.66	3.33	.....	.....	Graded	92.30
716	Columbia Contr. Co.	28	Bradford	11.21	11.21	10.08	.....	.....	Graded	94.00
717	Southern Surety Co.	28	Bradford	11.02	11.02	9.70	.....	.....	Graded	93.00
720	Hardee-Fisher Co., Inc.	11	Jefferson	9.64	9.16	4.82	.....	.....	Graded	60.00
722	R. J. Carroll	48	Jefferson	8.83	8.83	3.44	.....	.....	Graded	50.00
723	L. B. McLeod Const. Co.	66	Leon	11.76	10.00	9.41	.....	.....	Graded	78.00
724	L. B. McLeod Const. Co.	66	Leon	11.10	0.00	0.00	.....	.....	Graded	0.00
726	State Convict Forces	19	Dixie	12.57	4.00	1.89	.....	.....	Graded	10.00
728	State Convict Forces	10	Leon	11.65	10.07	9.90	.....	.....	Graded	81.30
732	Gilbert & Hadsock	17	Polk	8.94	3.57	.45	.....	.....	Graded	11.00
736	C. G. Kershaw Contr. Co.	39	Holmes	8.58	6.00	1.37	.....	.....	Graded	23.00
740	State Convict Forces	10	Gulf	9.63	9.63	9.63	.....	.....	Graded	100.00
742	Little & Lee	13	Alachua	7.65	7.65	7.50	.....	.....	Graded	98.40
743	State Convict Forces	10	Bay	18.25	18.25	17.34	.....	.....	Graded	85.00
744	State Convict Forces	19	Madison	5.79	4.05	2.84	.....	.....	Graded	46.00
745	Convicts & Taylor Co.	19	Taylor	15.95	11.17	8.77	.....	.....	Graded	50.00
748	State Convict Forces	35	Madison	6.22	6.00	4.54	.....	.....	Graded	74.20
749	State Convict Forces	14	Gilchrist	7.81	7.42	.75	.....	.....	Graded	14.00
750	State Convict Forces	14	Gilchrist	12.97	3.50	0.00	.....	.....	Graded	4.00
755	B. Booth	17	Polk	11.22	6.84	2.80	.....	.....	Graded	31.00
757	Little & Lee	2	Polk	10.26	8.21	2.97	.....	.....	Graded	46.00
758	Little & Lee	2	Polk	8.34	7.59	4.09	.....	.....	Graded	49.00
763	A. E. Campbell	50	Suwannee	12.23	11.48	11.48	.....	.....	Graded	92.70
764	F. W. Simpson	50	Suwannee	12.00	12.00	11.52	.....	.....	Graded	96.86
765	F. W. Simpson	50	Suwannee	7.00	6.99	6.78	.....	.....	Graded	95.00
786	State Convict Forces	52	Jackson	6.76	6.76	6.76	.....	.....	Graded	96.56
798	State Convict Forces	13	Nassau	15.03	0.00	0.00	.....	.....	Graded	0.00
827	S. G. Collins	.....	Escambia	8.12	1.54	0.00	.....	.....	Graded	1.50
Total Completed March 31, 1928.					2542.62	2438.25	1190.29	1835.13		
Complete month of March.					75.36	50.05	21.06	19.39		
Total Complete February 29, 1928.					2467.26	2388.20	1169.23	1815.74		

## TOTAL MILEAGE COMPLETE

	Concrete	Brick	B. C.	S. A.	B. M.	Asph. Block	S.T.R.B.	S.T.S.C.	S. C.	Marl	Total
Complete to February 29, 1928.	243.97	17.13	36.46	97.02	106.06	23.20	894.43	169.24	257.04	27.58	1872.13
Complete month of March.	1.77	.....	.....	3.27	.82	.....	12.25	1.67	.....	.....	19.78
Complete to March 31, 1928.	245.74	17.13	36.46	100.29	106.88	23.20	906.68	170.91	257.04	27.58	1891.91






**HIGH TEST  
CONCRETE HIGHWAYS**

Is 3500 lb. concrete strong enough? On this 10.7 mile concrete highway between Birmingham and Montgomery, the Walter Bryson Paving Co. using a designed mix with

**Arrowhead SAND and GRAVEL**

produced concrete that averaged 3516 lbs. (28 cylinder tests). It takes high test aggregates to produce high test concrete. Why not use them—the cost is the same!

**MONTGOMERY GRAVEL CO.**  
Shepherd Building MONTGOMERY, ALA.

# ROLLERS

The Up-to-dateness of the

## BUFFALO SPRINGFIELD

accounts for the nation-wide preference of street and road builders for this particular make of equipment. That this preference actually does exist all over the country may be verified very quickly by anyone inclined to make a survey of the roller equipment in use in his particular section of the country.

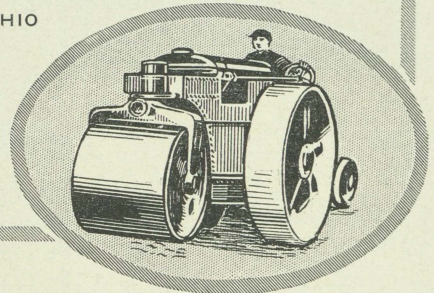
Buffalo-Springfield jobs are designed to meet all sorts of conditions and are built in many models and sizes.

*Scarijers and other special attachments optional. Write*

**THE BUFFALO-SPRINGFIELD ROLLER CO.**

SPRINGFIELD, OHIO

Florida Agent  
M. D. MOODY,  
402 Masonic Temple  
Jacksonville



## TECHNICAL GOODS

*{ Most Complete Line  
in the Southeast }*

Representing

THE KEUFFEL & ESSER CO.

W. & L. E. GURLEY

BUFF & BUFF MFG. CO.

LUFKIN RULE CO.

CHICAGO STEEL TAPE CO.

C. F. PEASE & CO.

HAMILTON MFG. CO.

THEO. ALTENEDER & SONS

AND MANY OTHER MANUFACTURERS  
OF GOODS OF RECOGNIZED MERIT

Write for Samples, Prices, Catalogs

THE H. & W. B.  
**Drew Co.**  
EST. 1855 - QUALITY EVER SINCE

TAMPA

JACKSONVILLE

MIAMI

## Reinforcing Bars for Concrete

Made in the United States  
from new billet steel.

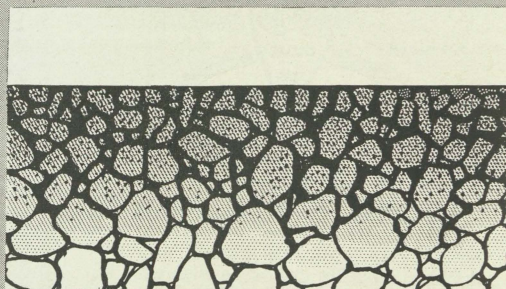
Intelligent, dependable service  
by expert bridgemen.

## Dudley Bar Company

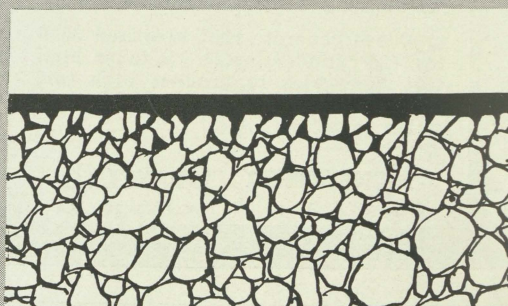
BIRMINGHAM, ALA.



A  
CROSS-SECTION  
of a  
Surface-treated  
ROAD *should look  
like This*



*and NOT  
like this*



FOR stable, smooth-riding, skidproof roads, a bituminous road material must be greaseless by nature . . . must penetrate . . . must adhere to and bind the aggregate into a solid mass . . . and the surface must be an integral part of the road.

Tarmac meets these requirements.

Tarmac is bought on its merits. You cannot buy a bituminous road material that will give you as good results as Tarmac, for less money. Write for detailed specifications, covering the various uses for Tarmac.

AMERICAN TAR PRODUCTS COMPANY

General Offices: Union Trust Building, Pittsburgh, Pa.

New England Division, TAR PRODUCTS CORPORATION, Providence, R. I.

M. D. MOODY

402 Masonic Temple

JACKSONVILLE, FLORIDA

*The Upper Illustration*

A cross-section drawing of a Tarmac surface-treated road. Tarmac has penetrated the road; part of it staying on the surface to hold the covering material solidly in place; the rest working its way down into the road, making the surface an integral part of the road. This assures stability.

*The Lower Illustration*

A cross-section of a bituminous road material that has *not* penetrated . . . that has *not* become an integral part of the road . . . lying on the surface like a mat.

**Tarmac Penetrates**  
*It becomes an integral part of the ROAD*